DOCUMENT RESUME

ED 211 921 CS 006 389

AUTHOR Smith, Lawrence L.
TITLE An Assessment Report of the State of the Arts in Basic Skills Instruction.
PUB DATE Nov 81
NOTE 24p.

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Basic Skills; Behavioral Objectives; *Educational Assessment; *Educational Needs; Elementary Secondary Education; *Mathematics Instruction; *Needs Assessment; *Reading Instruction; State Standards; State Surveys; Student Evaluation; *Student Needs
IDENTIFIERS *Florida

ABSTRACT

Presenting results from a project that analyzed four years of student scores on the Florida State Student Assessment Test (SSAT), this paper first provides background information on why the study was undertaken (to determine student needs and teacher training needs) and how the data were collected and analyzed. The bulk of the report, a two-part discussion of student performance on 13 reading and 24 mathematics performance objectives, examines those enabling skills and objectives with which third, fifth, eighth, and eleventh grade students had the most difficulty. The report focuses on the following skills or objectives: (1) determining word meaning from context; (2) recognizing fantasy, fact, and opinion; (3) recognizing irrelevant and invalid statements; (4) adding and subtracting fractions; (5) solving real-world problems involving fractions, decimals, and percentages; and (6) solving money problems. Following the section on results are a summary of the data and lists of recommendations for teachers, school administrators, and colleges of education. Sample test items from the SSAT are appended. (RL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED211921

An Assessment Report of the State of the Arts in Basic Skills Instruction

Lawrence L. Smith

Principal Investigator

DOE-UF Project

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

~~Lawrence L. Smith~~

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

November, 1981

CS006389

FOREWORD

The DOE-UF Basic Skills Improvement project involved the talents of several individuals, each contributing to the final product.

Mrs. Ada Puryear, Administrator, Early Childhood and Elementary Education, served as the technical monitor for both agencies while the work was in progress.

Several Department of Education personnel gave freely of their time, advice, and suggestions throughout this project: Frederick Smith, Johann Chancey, Jean Marani, Brenda Parks, Lynn Tabeling, Karen Bennett, and Andy Reeves.

Professor Lee Mullally assisted with the school visitations. Appreciation is also expressed to the following school personnel who participated in the on-site visitations: Sue Griffith and Gail McLaurin (Alachua County); Creola Willis and John H. Headlee (Citrus County); Rose Smith (Columbia County); Sylvia Boyd and Perry Geiger (Levy County); Millie Mizell and Ila Locke (Sumter County); Evelyn Lynn, Miriam Davis, and Joseph Van Hoff (Volusia County); Wesley Davis (Escambia County); Mary Hancock (Okaloosa County); and Hilda Coursey (Walton County).

Introduction

The purpose of this project is to analyze the State Student Assessment Test (SSAT) in order to determine student needs and teacher training needs as well as make recommendations for meeting identified student needs in reading and mathematics.

To determine the needs, each standard of the SSAT was examined for the 1977-78, 1978-79, 1979-80, and 1980-81 academic years. The following procedure was used to identify the student needs based on the SSAT. First, data regarding the percent of students in the state responding correctly to the reading and math standards and skills from 1977 through 1980 were compiled. Second, the percentage scores for each of those years were ranked for grades three, five, eight, and eleven. Then, to determine the students' most salient needs, the rank order scores for each standard were added and the sum was divided by the number of years that student performance had been assessed on the SSAT. For example, in reading, Standard J was ranked 1, 1, 1, 1 for 1977, 1978, 1979, and 1980 for third grade students. The average score for Standard J was 1 indicating that third grade students rank lowest on Standard J. After the average rankings were determined, the percent of students responding correctly to the lowest ranking standards were examined to determine how great the students' needs were for that standard. In other words, just because a standard ranks lowest for a particular grade level does not mean that there is a great need to focus on that standard. For instance, Standard J ranked the lowest for grade three; if the percentage of students responding correctly to Standard J is examined, it is apparent that somethings needs to be done to increase the percent of students responding correctly to that standard. On the other hand, Standard I ranked the lowest for eleventh grade students. The percent of students responding correctly to Standard I, was 72, 83, 83, and 84 for 1977, 1978, 1979, and 1980 respectively. Since the percentages of eleventh grade students responding correctly to Standard I are higher than the percentages of third grade students responding to Standard J, it would appear that the eleventh grade students needs are not as great for Standard I as the third grade students needs are for Standard J.

Generally speaking, educators are capable of identifying student needs. However, educators need to be more successful at improving the needs of students. Improving student performance on the identified weak areas in reading and math is not as simple as giving the students more practice in those areas. When students are given more instruction and practice in the identified weak areas and they still do not improve, it is very likely that the students do not possess the enabling skills to perform that particular task, or that the instruction has not been appropriate for the students. For example, if a student is unsuccessful with multiplication using a two-digit multiplier, it is incumbent on the teacher to determine whether the student can multiply using a one-digit multiplier. It may very well be that the student does not even know the basic multiplication facts for the numbers 1 through 9. To expect a student to multiply using two-digit multipliers when the student does not possess the enabling skills is asking that student to perform an impossible task.

The enabling skills for the standards students have the greatest difficulty with are listed in the body of the paper. The reader should be aware that the

enabling skills listed were taken from Project to Improve Education in the Basic Skills - Specifying Basic Skills Technical Report No. 2 (1976). It is very likely that other enabling skills would be listed had another document been used. While the enabling skills listed are necessary to perform the tasks, they may not be sufficient. In other words, there is more to being able to perform the tasks for the standards than being capable of performing the enabling skills. Such things as concept teaching, mastery, meaning, and understanding are vital to student learning.

Grade 3

Student performance is consistently weakest for third grade students on Standard J, "The student will recognize irrelevant and invalid statements." All other reading standards for third grade students are well above 70 percent. While 70 percent of the third grade students mastered this standard during the 1980-81 school year, and 76 percent of the third grade students mastered this standard in 1978-79, less than 70 percent of the students mastered it in the 1977-78 and the 1979-80 tests. Since Standard J is the most difficult standard for many third grade students, concentrated efforts by educators could help in eliminating this weakness.

The purpose of this project is not to contend whether or not Standard J should be assessed at the third grade level; however, it should be noted that the scope and sequence charts for basal readers do not include that task until after third grade. Nevertheless, since the standard is being assessed, teachers will need to assist students in learning how to recognize irrelevant and invalid statements.

First teachers must determine if the student(s) has the enabling skills to successfully recognize irrelevant and invalid statements. The early comprehension tasks identified by Powell, et al. (1976) are:

1. A student needs to know denotative meanings of words in order to develop a literal level of comprehension.

2. Since the primary level of comprehension is sentence comprehension, the student must be able to differentiate between sentences that make sense and those that are nonsense. For example, the student needs to know that "The girl went to the house," is a sentence and "The girl house" is not a sentence.

3. The student needs to be able to answer questions about the "who of the sentence or paragraph" and the "did what" part of the sentence or paragraph. Powell also suggests other questions formed with the "wh" beginning, such as where and when. These kinds of questions represent natural units of the sentence and paragrapah and indicate literal understanding.

If the student can perform the aforementioned enabling skills, then the student should be ready to identify the irrelevant sentence in a given paragraph. The tasks required in order to be successful on Standard J are:

1. The student must be able to read a four-sentence paragraph written at the first or second grade level.

2. The student must be able to identify the one irrelevant sentence in the paragraph.

Sample Item[1]

Directions: Read the story. Mark the sentence that does NOT belong in the story.

John loves his cat. The cat's name is Frosty. Frosty likes to sleep a lot. John likes to ride his bike.

Which sentence does NOT belong in the story?

a. John loves his cat.
b. The cat's name is Frosty.
c. John rides his bike.
d. Frosty likes to sleep a lot.

[1]All Sample Items in this project were taken from the Reading and Mathematics Item Specifications, Basic Skills 1977 Adoption of the State Student Assessment Test (see references).

PERCENT OF GRADE 3 STUDENTS IN THE STATE
RESPONDING CORRECTLY
TO THE READING STANDARDS AND SKILLS[1]

	77-78	78-79	79-80	80-81	Ave.[2] Rank
A - THE STUDENT WILL ACQUIRE A BASIC VOCABULARY AS DETERMINED BY A SPECIFIED WORD LIST.	98 (9)	99 (7)	96 (9)	96 (9)	8.5
1. Identify words selected from the Dolch 220 list.	98	99	97	98	
2. Associate words with words of opposite meaning.			95	95	
B - THE STUDENT WILL DETERMINE WORD MEANING FROM THE WAY THE WORD IS USED IN A PASSAGE. (No skills expected to be mastered by beginning grade 3.)					
C - THE STUDENT WILL DETERMINE WORD MEANING FROM A KNOWLEDGE OF WORD PARTS AS USED IN GIVEN CONTEXT.	83 (7)		86 (6)	92 (7.5)	6.83
3. Associate compound words with their component words.	83				
4. Associate contractions with their component words.			86	92	
5. Associate the appropriate inflected words (regular plurals) in a given context.					
D - THE STUDENT WILL DETERMINE WHETHER DIFFERENT SELECTIONS HAVE SIMILAR MEANINGS. (No skills expected to be mastered by beginning grade 3.)					
E - THE STUDENT WILL DETERMINE THE MAIN IDEA OF A MESSAGE. (No skills expected to be mastered by beginning grade 3.)					

[1]The number in parentheses is the rank order of the students responding correctly to the standards.

[2]The number in the last column is the average rank order of the students responding correctly to the standards.

	77-78	78-79	79-80	80-81	Ave. Rank
F - THE STUDENT WILL FIND INFORMATION IN A MESSAGE.	79 (5.5)	88 (4)	91 (8)	91 (6)	5.88
6. Find who, what, where, when, which and how information in a selection.	79	88	91	91	
G - THE STUDENT WILL DETERMINE THE CAUSES AND EFFECTS OF EVENTS AND ACTIONS.	75 (3)		90 (7)	92 (7.5)	5.83
7. Determine the stated effect of an action.	75		90	92	
H - THE STUDENT WILL DETERMINE THE LOGICAL GENERALIZATIONS WHICH CAN BE DRAWN FROM A MESSAGE.	74 (2)	83 (2)	83 (3)	83 (3)	2.5
8. Identify story outcomes.	74	83	83	83	
I - THE STUDENT WILL RECOGNIZE FANTASY, FACT, AND OPINION IN A MESSAGE.	78 (4)	87 (3)	84 (4.5)	84 (4.5)	4
9. Distinguish between "real" and "unreal".	78	87	84	84	
J - THE STUDENT WILL RECOGNIZE IRRELEVANT AND INVALID STATEMENTS.	63 (1)	76 (1)	68 (1)	70 (1)	1
10. Identify an irrelevant statement in a selection.	63	76	68	70	
K - THE STUDENT WILL FOLLOW ORAL AND WRITTEN DIRECTIONS.	90 (8)	93 (6)	84 (4.5)	78 (2)	5.13
11. Follow oral directions to complete a task.	93	96			
12. Follow written directions to complete a task.	88	90	94	78	
L - THE STUDENT WILL IDENTIFY APPROPRIATE SOURCES FOR NEEDED INFORMATION. (No skills expected to be mastered by beginning grade 3.)					
M - THE STUDENT WILL USE APPROPRIATE REFERENCE SKILLS.	79 (5.5)	90 (5)	80 (2)	84 (4.5)	4.25
13. Identify by first letter a list of words which is correctly alphabetized.	71	83			

6

	77-78	78-79	79-80	80-81	Ave. Rank
14. Put words in alphabetical order by first letter.			80	84	
15. Use a table of contents to identify the location (page number) of a specific story.	86	92			

Grade 5

Student performance on two standards is weak for fifth graders. They are, Standard B, "The student will determine word meaning from the way the word is used in a passage," and Standard E, "The student will determine the main idea of a message." In order to be able to master Standard B, the students will need to be able to do the following enabling skills:

1. The student must identify high frequency words without analysis or synthesis.

2. The student must be able to recognize the denotative meaning of the basic vocabulary.

If the students are capable of demonstrating achievement in performance of the enabling skills, then they should be ready to determine the meaning of a word in context using synonym and definition clues. The tasks that students must be able to do to master Standard B are:

1. The student must recognize words on the DOE Word List and the State Assessment Minimum List for Reading (SAML-R).

2. The student must be able to extract the meaning of words when the meaning is given in the sentences(s).

3. The student must be able to identify synonym clues when a synonym for a word is given in the sentence(s).

Sample Items

Directions: Read the following sentences and choose the best meaning for the underlined word.

1. On most ships people take turns on watch. A watch is four hours of duty spent keeping track of events on board. Each man or woman on watch has an important job to do.

   a. sleeping time
   b. play time
   c. guard time
   d. picnic time

2. John is playing with his top. When he throws it to the ground, it spins or whirls.

   a. turns
   b. stops
   c. hops
   d. walks

The second area of weakness identified for fifth grade students is Standard E, which is "The student will determine the main idea of a message."

In order to teach students this task, teachers need to be certain that a child has the enabling skills to do the task. According to Powell et al. (1976), several comprehension tasks need to be learned in the lower grades. They are:

1. Students must be able to differentiate between sentences that make sense and those that are nonsense.

2. Students need to respond to questions dealing with the basic wh framework (who - did what).

If the students demonstrate performance of the enabling skills, then they should be ready to learn to determine the main idea stated in a paragraph. The tasks that students must be able to do to master Standard E are:

1. The student must be able to read a paragraph written at the third grade level.

2. The student must be able to identify the main idea of a paragraph when the main idea is stated in the first sentence, in the body, or at the end of the paragraph.

Sample Item[1]

Directions: Read the story and choose the sentence that best tells the main idea.

When the Brown family arrived at the beach, the sun was shining. The children played in the sand while their mother and father sat in the sun. Then clouds began to cover the sun. The wind started to blow hugh waves toward the beach and rain began to fall. The storm at the beach spoiled the day for the Brown family.

Which sentence best tells the main idea?

a. The Brown family went to the beach.
b. The children played in the sand.
c. The storm at the beach spoiled the day.
d. It was a sunny day at the beach.

[1]Many items such as the previously mentioned item can be found in commercial material using the same format.

PERCENT OF GRADE 5 STUDENTS IN THE STATE
RESPONDING CORRECTLY
TO THE READING STANDARDS AND SKILLS[1]

	77-78	78-79	79-80	80-81	Ave.[2] Rank
A - THE STUDENT WILL ACQUIRE A BASIC VOCABULARY AS DETERMINED BY A SPECIFIED WORD LIST.	95 (8.5)	98 (9.5)	96 (10)	98 (10)	9.5
1. Identify words selected from the Dolch 220 list.	99	99			
2. Associate words which are the same or opposite in meaning	92	96	96	98	
B - THE STUDENT WILL DETERMINE WORD MEANING FROM THE WAY THE WORD IS USED IN A PASSAGE.		58 (1)	69 (2)	73 (2.5)	1.83
3. Determine the meaning of a word in context using synonym and definition clues.		58	69	73	
C - THE STUDENT WILL DETERMINE WORD MEANING FROM A KNOWLEDGE OF WORD PARTS AS USED IN A GIVEN CONTEXT.	95 (8.5)	94 (7)	66 (1)	73 (2.5)	4.75
4. Associate compound words with their component words.	92				
5. Associate contractions with their component words.	95	94			
5. Associate the appropriate derived word (prefixes and suffixes) in a given context.			66	73	
D - THE STUDENT WILL DETERMINE WHETHER DIFFERENT SELECTIONS HAVE SIMILAR MEANINGS.	71 (2)		85 (6)	88 (5)	4.33
7. Determine whether different sentences have similar meanings.	71		85	88	
E - THE STUDENT WILL DETERMINE THE MAIN IDEA OF A MESSAGE.	57 (1)		73 (3)	67 (1)	1.67
8. Determine the main idea stated in a paragraph.	57		73	67	

[1]The number in parentheses is the rank order of the students responding correctly to the standards.

[2]The number in the last column is the average rank order of the students responding correctly to the standards.

	77-78	78-79	79-80	80-81	Ave. Rank
F - THE STUDENT WILL FIND INFORMATION IN A MESSAGE.	86 (7)	96 (8)	83 (4.5)	84 (4)	5.88
9. Find who, what, where, when which, and how information in a selection.	86	96	94	97	
10. Determine the order of details in a selection.			64	60	
G - THE STUDENT WILL DETERMINE THE CAUSES AND EFFECTS OF EVENTS AND ACTIONS.	75 (5)	90 (6)	90 (9)	96 (9)	7.25
11. Determine the stated effect of an action.	60	90	91	97	
12. Determine the stated cause of an action.	72		88	95	
H - THE STUDENT WILL DETERMINE THE LOGICAL GENERALIZATIONS WHICH CAN BE DRAWN FROM A MESSAGE.	74 (3.5)	87 (4.5)	83 (4.5)	89 (6.5)	4.75
13. Identify story outcomes.	77	87	83	89	
14. Determine an appropriate conclusion.	53				
I - THE STUDENT WILL RECOGNIZE FANTASY, FACT, AND OPINION IN A MESSAGE.					
15. Distinguish between facts and opinions.					
J - THE STUDENT WILL RECOGNIZE IRRELEVANT AND INVALID STATEMENTS.	74 (3.5)	87 (4.5)	87 (7.5)	92 (8)	5.88
16. Identify an irrelevant statement in a selection.	74	87	87	92	
17. Identify an invalid statement in a selection.					
K - THE STUDENT WILL FOLLOW ORAL AND WRITTEN DIRECTIONS.		79 (2)	87 (7.5)	89 (6.5)	5.33
18. Follow oral directions to complete a task.	68	79	89	88	
19. Follow written directions to complete a task.	75	84	89	92	
L - THE STUDENT WILL IDENTIFY APPROPRIATE SOURCES FOR NEEDED INFORMATION.		98 (9.5)			9.5
20. Identify the appropriate source to obtain information on the spelling and meaning of a word.		98			

11

M - THE STUDENT WILL USE APPROPRIATE REFERENCE SKILLS.

21. Identify by first three letters a list of words which is correctly alphabetized.
22. Alphabetize words by using the first two letters of each word.
23. Locate a specific word.
24. Use a table of contents to identify the major section most likely to contain a specific type of information.

77-78	78-79	79-80	80-81	Ave. Rank
82 (6)	85 (3)			4.5
82	85			
84	90			

Grade 8

Student performance on two standards appears to be weak for eighth grade students. They are Standard I, "The student will recognize fact and opinion in a message," and Standard J, "The student will recognize irrelevant and invalid statements." The readers should be aware that Standard J was assessed during the 1977-78 academic year and has not been assessed since. Standard I has been tested every year, and at no time have 70 percent of the students demonstrated mastery of that standard. Both standards fit into the category of logical thinking.

There are three enabling comprehension skills that are necessary in order for students to be successful learning both standards. They are:

1. Students need to differentiate between sentences that make sense and those that are nonsense.

2. Students need to respond to questions dealing with the basic wh framework (who - did what).

3. Students need to be able to extract ideas which are not explicitly stated. This is commonly called inferential comprehension.

The standards fit into what is commonly called evaluative reading. That is, students must make judgments about what they read. Good readers continually check the truth, logic, reliability, and accuracy of what is written. "The critical reader continually tests for truth against what is not true, determines what is logical or not logical, and questions why something is said and for what purpose, etc." (Powell, et al., (1976) p. 20).

In order to be successful on Standard I, students will have to identify a fact or opinion that is stated in a narrative or expository paragraph.

Sample Items

Directions: Read the story and choose the sentence which is an opinion.

Ann's family purchased a new red car for $7,000. They selected a station wagon so that the entire family could ride in it comfortably. The car has three seats that each hold three people, so that altogether nine people can ride in the car. Ann thinks it is really fun to take eight of her friends for a ride in the new car.

Which sentence is an opinion?

a. Ann's family purchased a new red car for $7,000.
b. The new car has three seats that can each hold three people.
c. It is fun to take Ann's friends riding in the new car.
d. Altogether nine people can ride in the new family car.

"Note: Statements of fact should be clearly provable and not controversial

because of lack of definite evidence or because of affective commitments of the test takers. 'Cigarette smoking causes lung cancer' is an example of the kind of statement that should be avoided" (Reading Item Specifications, Basic Skills 1977 Adoption, p. 58).

Directions: Read the paragraph and choose the sentence which best reflects Ms. Truitt's opinion.

Six weeks ago the school cafeteria began serving breakfast each morning before school began. They serve orange juice and milk to drink, and toast, bacon and eggs to eat. Ms. Truitt noticed that the students in her morning class seemed more energetic and attentive. She discussed this change with her students. She found that many of them never ate breakfast at home, but would now eat in the cafeteria with friends. Other students used to stop on the way to school and buy candy and sodas instead of eating breakfast. These students are also going to the cafeteria to eat in the mornings.

Which sentence best reflects Ms. Truitt's opinion?

a. The school she teaches in is very modern.
b. Schools should not serve breakfast to students.
c. A good breakfast can improve your ability to work at school.
d. The lunches served in the school cafeteria are not very tasty.

Directions: Read the paragraph and find which sentence does NOT belong in the story.

Jackie began baby-sitting when he was twelve. He began by taking care of his little sister on afternoons when his mother had to work. Next he got a job sitting for his next door neighbors who had two young boys. They also had a big car and sometimes took Jackie for rides. Within the next two years Jackie got many more jobs as a baby-sitter. Last week he applied for a part-time job at a day-care center. He got the job because of all his experience taking care of children.

Which sentence does NOT belong in the story?

a. Within the next two years Jackie got many more jobs as a baby-sitter.
b. They also had a big car and sometimes took Jackie for rides.
c. Next he got a job sitting for his next door neighbors who had two young boys.
d. Jackie began baby-sitting when he was twelve.

Also for Standard J, students must identify a conclusion which cannot be proven based on the information in that narrative or expository paragraph.

Directions: Read the story and answer the question.

John likes school. Sometimes he goes to the library. After dinner he does his homework.

Which statement cannot be proven by information given in the story?

a. John goes to school.
b. John has homework to do.
c. John is a good student.
d. John goes to the library.

PERCENT OF GRADE 8 STUDENTS IN THE STATE
RESPONDING CORRECTLY
TO THE READING STANDARDS AND SKILLS[1]

	77-78	78-79	79-80	80-81	Ave. Rank[2]
A - THE STUDENT WILL ACQUIRE A BASIC VOCABULARY AS DETERMINED BY A SPECIFIED WORD LIST.	53 (2)	80 (5)	72 (4)	74 (3)	3.5
1. Associate words which are the same or opposite in meaning.	64	86	79	82	
2. Associate printed words with their oral equivalents.					
3. Associate words with their literal definition.	43	69	65	64	
B - THE STUDENT WILL DETERMINE WORD MEANING FROM THE WAY THE WORD IS USED IN A PASSAGE.	68 (4)	72 (2.5)	69 (2)	72 (2)	2.63
4. Determine word meaning using specific context clues.	68	72	69	72	
C - THE STUDENT WILL DETERMINE WORD MEANING FROM A KNOWLEDGE OF WORD PARTS AS USED IN A GIVEN CONTEXT.		87 (8)	94 (8)	96 (9)	8.33
5. Associate contractions with their component words in a given context.		91	95	97	
6. Associate the appropriate derived words (prefixes and suffixes) in a given context.	83	88	90	89	
7. Associate the appropriate inflected words (plurals, possessives, comparatives, superlatives, tense) in a given context.	64	79			
D - THE STUDENT WILL DETERMINE WHETHER DIFFERENT SELECTIONS HAVE SIMILAR MEANINGS.					
(Skills mastered in previous progression levels are expected to be maintained as more difficult materials are appropriate for this grade level.)					

[1]The number in parentheses is the rank order of the students responding correctly to the standards.

[2]The number in the last column is the average rank order of the students responding correctly to the standards.

	77-78	78-79	79-80	80-81	Ave. Rank
E - THE STUDENT WILL DETERMINE THE MAIN IDEA OF A MESSAGE.	70 (5)	72 (2.5)	70 (3)	77 (4)	3.63
8. Determine the main idea stated in a paragraph.	66	72	69	73	
9. Determine the main idea inferred from a paragraph.	64	80	81	89	
F - THE STUDENT WILL FIND INFORMATION IN A MESSAGE.	73 (7.5)	84 (7)	81 (5)	89 (6.5)	6.5
10. Find who, what, where, when which, and how information in a selection.	83	83	90	95	
11. Determine the order of details in a selection.	63	69	66	72	
12. Find details which refer to a main idea.	72				
G - THE STUDENT WILL DETERMINE THE CAUSES AND EFFECTS OF EVENTS AND ACTIONS.					
13. Determine the stated cause and stated effect of an event or an action.					
H - THE STUDENT WILL DETERMINE THE LOGICAL GENERALIZATIONS WHICH CAN BE DRAWN FROM A MESSAGE.		91 (9)	95 (9)	97 (8)	8.67
14. Identify an appropriate conclusion in a subject area.					
15. Infer feelings and emotions.		91	95	97	
I - THE STUDENT WILL RECOGNIZE FANTASY, FACT, AND OPINION IN A MESSAGE.	62 (3)	67 (1)	61 (1)	63 (1)	1.5
16. Distinguish between facts and opinions.	62	67	61	63	
17. Identify an unstated opinion.					
J - THE STUDENT WILL RECOGNIZE IRRELEVANT AND INVALID STATEMENTS.	45 (1)				1
18. Identify an irrelevant statement in a selection.					
19. Identify conclusions which are based upon insufficient evidence.	45				
K - THE STUDENT WILL FOLLOW ORAL AND WRITTEN DIRECTIONS.	73 (7.5)	82 (6)	86 (6.5)	88 (5)	6.25
20. Follow written directions to complete a task.	73	82	86	88	

	77-78	78-79	79-80	80-81	Ave. Rank
L - THE STUDENT WILL IDENTIFY APPROPRIATE SOURCES FOR NEEDED INFORMATION.	78 (9)	94 (10)			9.5
21. Identify an appropriate source to obtain information on goods and services and on day-to-day events.	78	94			
M - THE STUDENT WILL USE APPROPRIATE REFERENCE SKILLS.	71 (6)	77 (4)	86 (6.5)	89 (6.5)	5.75
22. Select an appropriate dictionary definition for a word used in a specific context.	66	79	81	84	
23. Use a table of contents to identify the chapter most likely to contain information on a specified subject.			94	96	
24. Use an index to locate a subtopic by page number.	75	75	80	83	
25. Use directions to locate a specific place on a map.	76	75	80	85	

Grade 11

Student performance on standards for grade 11 are above 70 percent. The lowest ranking standard on SSAT I was Standard I. There appears to be steady improvement on this skill. As teachers continue to work with everyday type materials regarding fact and opinion, the students should continue to improve. Materials such as the local newspapers are helpful for working on this skill.

PERCENT OF GRADE 11 STUDENTS IN THE STATE
RESPONDING CORRECTLY
TO THE READING STANDARDS AND SKILLS[1]

	77-78	78-79	79-80	80-81	Ave.[2] Rank
A - THE STUDENT WILL ACQUIRE A BASIC VOCABULARY AS DETERMINED BY A SPECIFIED WORD LIST.	88 (8)	82 (1)	85 (6)	86 (4)	4.75
1. Associate words which are the same or opposite in meaning.	88	88	89	89	
2. Associate printed words with their oral equivalents.					
3. Associate words with their literal definitions.		69	74	78	
4. Associate words with their connotative definitions.					
B - THE STUDENT WILL DETERMINE WORD MEANING FROM THE WAY THE WORD IS USED IN A PASSAGE.	87 (7)	83 (3)	74 (1)	77 (1)	3
5. Determine word meaning using specific context clues.	87	83	74	77	
C - THE STUDENT WILL DETERMINE WORD MEANING FROM A KNOWLEDGE OF WORD PARTS AS USED IN A GIVEN CONTEXT.	75 (3)	93 (6)	82 (3)	93 (7.5)	4.88
6. Associate contractions with their component words in a given context.					
7. Associate the appropriate derived words (plurals, possessives, comparatives, superlatives, tense) in a given context.	75	93	82	83	
8. Associate the appropriate inflected words (plurals, possessives, comparatives, superlatives, tense) in a given context.				97	

[1]The number in parentheses is the rank order of the students responding correctly to the standards.

[2]The number in the last column is the average rank order of the students responding correctly to the standards.

	77-78	78-79	79-80	80-81	Ave. Rank
D - THE STUDENT WILL DETERMINE WHETHER DIFFERENT SELECTIONS HAVE SIMILAR MEANINGS.					
(Skills mastered at previous progression levels are expected to be maintained with more difficult materials appropriate for this grade level.)					
E - THE STUDENT WILL DETERMINE THE MAIN IDEA OF A MESSAGE.	82 (4)	96 (8.5)	96 (8.5)	93 (7.5)	7.13
9. Determine the main idea stated in a paragraph.	81	95			
10. Determine the main idea inferred from a paragraph.	83	97	96	93	
11. Determine the main idea inferred from a selection.	67				
F - THE STUDENT WILL FIND INFORMATION IN A MESSAGE.	94 (10)	97 (10)		80 (2)	7.33
12. Find who, what, where, when, which, and how information in a selection.	94	97			
13. Determine the order of details in a selection.				80	
14. Find details which refer to a main idea.					
15. Determine details which are inferred from a selection.					
G - THE STUDENT WILL DETERMINE THE CAUSES AND EFFECTS OF EVENTS AND ACTIONS.					
16. Determine the inferred cause or effect of an action or event.					
H - THE STUDENT WILL DETERMINE THE LOGICAL GENERALIZATIONS WHICH CAN BE DRAWN FROM A MESSAGE.	84 (5)	94 (7)	92 (7)	94 (9)	7
17. Identify an appropriate conclusion in a subject area.	84	92	87		
18. Infer feelings and emotions.			90	93	
19. Identify outcomes based on inferences.		95	94	96	

	77-78	78-79	79-80	80-81	Ave. Rank
I - THE STUDENT WILL RECOGNIZE FANTASY, FACT, AND OPINION IN A MESSAGE.	72 (2)	83 (3)	83 (4)	84 (3)	3
20. Distinguish between facts and opinions.	73	84	83	84	
21. Identify an unstated opinion.	77	86			
J - THE STUDENT WILL RECOGNIZE IRRELEVANT AND INVALID STATEMENTS.	68 (1)	89 (5)	77 (2)	87 (5)	3.25
22. Identify an irrelevant statement in a selection.			75	80	
23. Identify conclusions which are based upon insufficient evidence.	68	89	84	89	
24. Identify inaccurate assumptions.			69		
K - THE STUDENT WILL FOLLOW ORAL AND WRITTEN DIRECTIONS.			96 (8.5)	95 (10)	9.25
25. Follow written directions to complete a task.			96	95	
L - THE STUDENT WILL IDENTIFY APPROPRIATE SOURCES FOR NEEDED INFORMATION.	90 (9)	96 (8.5)			8.75
26. Identify the appropriate source to obtain information on a topic	90	96			
M - THE STUDENT WILL USE APPROPRIATE REFERENCE SKILLS.	86 (6)	83 (3)	84 (5)	88 (6)	5
27. Select an appropriate dictionary definition for a word used in a specific context.	86	83	84	88	
28. Use an index to identify the location of information requiring the use of cross-references.					
29. Use highway and city maps.					
30. Use a transportation schedule to locate specific information.					

Third Grade

Student performance is consistently weak for third grade students on Standard V, "The student will solve money problems." Performance on other mathematics standards for third graders is adequate.

If a student is unable to perform the tasks necessary to succeed on Standard V, the teacher needs to examine whether the student is able to perform the enabling skills. In order for a student to be able to solve money problems, the enabling skills identified by Powell et al. (1976) are:

1. The student must demonstrate a one-to-one matching between the elements of a given equivalency.

2. The student must recognize equality and/or inequality of given sets of concrete (or pictorial representations).

3. The student must be able to find the cardinal number of a set of concrete objects ($n \leq 20$).

4. When given a number ($n < 100$), the student can state $n + 1$.

5. The student needs to be able to read and write numerals (symbols) to 100.

6. The student needs to be able to identify units and tens in a given numeral.

7. The student must recognize basic operational notation.

8. The student must be able to solve simple verbal problems using concrete objects (or pictorial representations).

9. The student needs to be able to classify coins according to value.

If a student is capable of doing the enabling skills, then the student should be ready to learn the tasks necessary for solving money problems. The tasks that the student must be able to do in order to succeed with Standard V are listed below.

1. The student must be able to read the word problem.

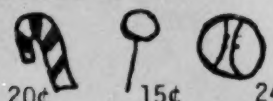
2. The student must recognize prices using the cent symbol.

3. The student must use addition without regrouping to solve real-world problems involving two purchases totaling no more than 50¢.

4. The student must be able to solve a one-step subtraction problem involving a purchase. The purchase price for each item should be no greater than 50¢.

Sample items for the tasks required are demonstrated below.

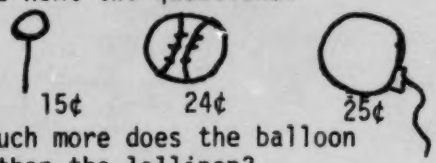
Sample Items



1. Jane buys the ball and the lollipop. How much does she have to pay?

   a. 9¢
   b. 35¢
   c. 39¢
   d. 49¢

Directions: Use this picture to answer the next two questions.



2. How much more does the balloon cost than the lollipop?

   a. 9¢
   b. 10¢
   c. 15¢
   d. 40¢

3. Joe bought a lollipop and gave the clerk 25¢. How much change did he get?

   a. 40¢
   b. 25¢
   c. 10¢
   d. 1¢

PERCENT OF GRADE 3 STUDENTS IN THE STATE
RESPONDING CORRECTLY
TO THE MATH STANDARDS AND SKILLS[1]

	77-78	78-79	79-80	80-81	Ave.[2] Rank
A - THE STUDENT WILL COUNT QUANTITIES.	97 (6)	97 (8.5)	98 (8)	98 (8)	7.63
1. Identify the number of objects in a set of no more than 100 objects	97	97	98	98	
B - THE STUDENT WILL READ AND WRITE NUMERALS.	99 (8)	99 (10)	99 (9)	99 (9)	9
2. Read and write the numeral for any given whole number less than 100.	99	99	99	99	
C - THE STUDENT WILL ROUND NUMBERS.					
(No skills expected to be mastered by beginning grade 3.)					
D - THE STUDENT WILL PUT NUMBERS IN ORDER.	98 (7)	97 (8.5)			7.75
3. Identify the smaller or larger of any two given whole numbers less than 20.	97				
4. Write the numeral that comes just before any given whole number less than 100.					
5. Write the numeral that comes just after any given whole number less than 100.					
6. Using a reference point, identify the ordinal position of any object in a set of no more than 10 objects.	96	97			
E - THE STUDENT WILL DETERMINE EQUIVALENT FORMS OF FRACTIONS, DECIMALS, AND PERCENTS.[3]		57 (1)	75 (2)	75 (2)	1.67
7. Identify fractional parts of regions that have been separated into halves, thirds, fourths.		57	75	75	

[1]The number in parentheses is the rank order of the students responding correctly to the standards.

[2]The number in the last column is the average rank order of the students responding correctly to the standards.

[3]Only fractions were assessed.

	77-78	78-79	79-80	80-81	Ave. Rank
F - THE STUDENT WILL ADD WHOLE NUMBERS.	88 (5)	95 (7)	96 (7)	96 (7)	6.5
8. Add any two 1-digit numbers (basic facts).					
9. Add any three 1-digit numbers, sums through 18.	95	97	97	98	
10. Add a 2-digit number to a 2-digit number, without regrouping	76	89	90	91	
11. Add a 1-digit number to a 3-digit number, without regrouping					
G - THE STUDENT WILL SUBTRACT WHOLE NUMBERS.	81 (2)	83 (3)	86 (4)	85 (3)	3
12. Subtract basic facts, sums through 18.	90	85	85	82	
13. Subtract a 1-digit number from a 2-digit number, without regrouping.	82	82	87	85	
14. Subtract any two 2-two numbers, without regrouping.	66	77	76	79	
H - THE STUDENT WILL MULTIPLY WHOLE NUMBERS. (No skills expected to be mastered by beginning grade 3.)					
I - THE STUDENT WILL DIVIDE WHOLE NUMBERS.					
15. Group twelve or fewer objects into sets of equal amounts (no remainders.)					
J - THE STUDENT WILL ADD AND SUBTRACT FRACTIONS. (No skills expected to be mastered by beginning grade 3.)					
K - THE STUDENT WILL MULTIPLY FRACTIONS. (No skills expected to be mastered by beginning grade 3.)					
L - THE STUDENT WILL ADD AND SUBTRACT DECIMALS. (No skills expected to be mastered by beginning grade 3.)					

	77-78	78-79	79-80	80-81	Ave. Rank
M - THE STUDENT WILL MULTIPLY AND DIVIDE DECIMALS.					
(No skills expected to be mastered by beginning grade 3.)					
N - THE STUDENT WILL FIND PERCENTAGES.					
(No skills expected to be mastered by beginning grade 3.)					
O - THE STUDENT WILL MEASURE TIME, TEMPERATURE, DISTANCE, CAPACITY, AND WEIGHT.		91 (5)	88 (5)	88 (5)	5
16. State the days of the week in order.					
17. Select a clock that shows a stated time on the hour and half-hour.		86	78	84	
18. Use a given unit of measurement (inch, centimeter, non-standard) to determine the length of an object in whole units.		93	96	92	
P - THE STUDENT WILL IDENTIFY GEOMETRIC FIGURES AND SHAPES.		92 (6)			6
19. Identify a circle, square, rectangle, and triangle.		92			
Q - THE STUDENT WILL IDENTIFY THE VALUE OF COINS AND BILLS.	86 (4)		89 (6)	91 (6)	5.33
20. Identify a set of coins equivalent in value to a given set of coins with the value not to exceed 25¢.	86		89	91	
R - THE STUDENT WILL DETERMINE INFORMATION NEEDED TO SOLVE A PROBLEM.					
(No skills expected to be mastered by beginning grade 3.)					
S - THE STUDENT WILL ESTIMATE SOLUTIONS BY ROUNDING.					
(No skills expected to be mastered by beginning grade 3.)					

	77-78	78-79	79-80	80-81	Ave. Rank
T - THE STUDENT WILL SOLVE REAL-WORLD PROBLEMS INVOLVING WHOLE NUMBERS.	85 (3)	87 (4)	82 (3)	87 (4)	3.5
21. Determine the solution to real-world problems involving addition of two 2-digit numbers, without regrouping.	85	87	90	90	
22. Determine the solution to real-world problems involving subtraction of two 2-digit numbers, without regrouping.			81	86	
U - THE STUDENT WILL SOLVE REAL-WORLD PROBLEMS INVOLVING FRACTIONS, DECIMALS, AND PERCENTS. (No skills expected to be mastered by beginning grade 3.)					
V - THE STUDENT WILL SOLVE MONEY PROBLEMS.	74 (1)	64 (2)	72 (1)	68 (1)	1.25
23. Use addition, without regrouping to solve real-world problems involving two purchases totaling no more than 50¢.	83				
24. Use subtraction, without regrouping, to solve real-world problems involving no more than 50¢.	54	64	72	68	
W - THE STUDENT WILL SOLVE MEASUREMENT PROBLEMS USING METRIC AND CUSTOMARY UNITS. (No skills expected to be mastered by beginning grade 3.)					
X - THE STUDENT WILL INTERPRET GRAPHS, TABLES, AND MAPS. (No skills expected to be mastered by beginning grade 3.)					

Fifth Grade

Student performance on four standards is weak for fifth grade students. Standard V, "The students will solve money problems" is the weakest area. Student performance is also weak on Standard U, "The student will solve real-world problems involving fractions, decimals, and percents." This standard was only assessed during the 1978-79 academic year. Standard I, "The student will divide whole numbers," ranked third. Standard T, "The student will solve real-world problems involving whole numbers," is the last standard where student performance was weak. The reader should be aware that Standards V and I have never been correctly responded to by 70 percent of the fifth grade students in Florida. Standard T was successfully responded to by 74 percent of the students in 1977-78; however, that standard has not been responded to correctly by 70 percent of the students since.

According to Powell et al. (1976) the enabling skills for Standard V are:

1. When given a number ($n < 100$), the student can state $n + 1$.
2. The student can read and write numerals (symbols) to 100.
3. The student can identify units and tens in a given numeral.
4. The student knows basic facts for all operations (+, -, x, ÷) for numbers 1-9
5. The student recognizes basic operation notation.
6. The student can solve simple verbal problems using concrete objects (or pictorial representations).
7. The student can classify coins according to size, color, or value.
8. The student must solve simple verbal problems, i.e. problems involving only one operation.
9. The student must be able to read and write money values to $1.00 using dollar signs and decimal points or cent symbols.

The task that the student must be able to do in order to be successful with Standard V are listed below.

1. The student must be able to read the word problem.
2. The student must recognize prices using dollar sign and decimal point or cent symbol.
3. The student must determine the sum of three purchases.
4. The student must be able to take the sum of the three purchases and subtract that amount from one dollar.

Sample items for Standard V are presented below.

Sample Items

1. Phil bought his lunch at the school lunchroom. Sandwiches cost 25¢ each. Milk was 15¢ a carton. Phil bought two sandwiches and one carton of milk. How much change should he get back from a dollar bill?

   a. 35¢
   b. 45¢
   c. 60¢
   d. 65¢

Ice-cream Soda	$.60
Candy Bar	$.20
Buble Gum	$.02

2. Casey had $1.00. He bought one ice-cream soda, one candy bar, and one piece of bubble gum. How much money did he have left?

   a. $.82
   b. $.28
   c. $.22
   d. $.18

At this level, enabling skills for Standard U, "The student will solve real-world problems involving fractions, decimals, and percents"* are listed below.

1. The student must find the cardinal number of a set of concrete objects ($n \leq 20$).

2. Given a number ($n < 100$), the student can state n + 1.

3. The student can order a given set of numbers (smallest - largest).

4. The student can read and write numerals (symbols) to 100.

5. The student must be able to recognize concrete representations of halves, thirds, fourths.

6. The student must know the basic facts for all operations (+, -, x, ÷) for numbers 1-9.

7. The student must recognize basic operational notation.

8. The student must be able to solve simple verbal problems using concrete objects (or pictorial representations).

* Only student performance on fractions was assessed.

9. The student must be able to order objects according to measurement attributes (largest-smallest).

10. The student must be able to select fractional parts of a whole (halves, thirds, fourths) and use the correct symbols.

11. The student must be able to determine relationships between numbers ($<$, $=$, $>$).

12. The student must be able to add and subtract using halves, thirds, and fourths.

13. The student must be able to solve simple verbal problems, i.e. problems involving only one operation.

For a student to be successful solving real-world problems involving fractions, the student must be able to do the tasks listed below.

1. The student must be able to read the problem.

2. The student must be able to add proper fractions with like denominators.

3. The student must be able to subtract proper fractions with like denominators.

A sample item is presented below.

Sample Item

Ann and Betty bought a pizza. Ann ate $\frac{2}{8}$ of the pizza. Betty ate $\frac{5}{8}$ of it. How much more of the pizza did Betty eat than Ann?

a. $\frac{3}{0}$ of the pizza

b. $\frac{3}{8}$ of the pizza

c. $\frac{7}{16}$ of the pizza

d. $\frac{7}{8}$ of the pizza

At this level, Standard I, "The student will divide whole numbers," is the third area of weakness for fifth grade students. According to Powell et al. (1976) the enabling skills are:

1. The student can demonstrate a one-to-one matching between the elements of given equivalency sets.
2. The student must be able to recognize equality and/or inequality of given sets of concrete objects (or pictorial representations).
3. The student must be able to find the cardinal number of a set of concrete objects ($n \leq 20$).
4. Given a number ($n < 100$), the student can state n + 1.
5. The student must be able to identify the basic units of the decimal numeration system digits 0-9.
6. The student can read and write the numerals (symbols) to 100.
7. The student can identify units and tens in a given numeral.
8. The student must know the basic facts for all operations (+, -, x, ÷) for numbers 1-9.
9. The student must recognize basic operational notation.
10. The student must perform all basic operations using zero.

If the student has the enabling skills, the student should be able to learn to divide whole numbers. The tasks required for dividing whole numbers are listed below.

1. The student must be able to write the basic division facts, products through 81.
2. The student must be able to divide a 3-digit number by a 1-digit number with remainder zero without regrouping.

Sample items for the tasks required are listed below.

Sample Items

1. Divide: $8 \div 4 =$

   a. 4
   b. 3
   c. 2
   d. 1

2. Divide: $6\overline{)24}$

   a. 12
   b. 4
   c. 8
   d. 3

3. Divide $4\overline{)880}$

   a. 440
   b. 220
   c. 22
   d. 2

4. Divide: $602 \div 2 =$

   a. 3
   b. 31
   c. 301
   d. 600

Standard T, "The student will solve real-world problems involving whole numbers," is the last area of weakness identified for fifth grade students. The enabling skills are:

1. The student must be able to find the cardinal number of a set of concrete objects ($n \leq 20$).
2. Given a number ($n < 100$), the student can state $n + 1$.
3. The student must be able to identify basic units of the decimal numeration system digits 0-9.
4. The student can identify units and tens in a given numeral.
5. The student must know the basic facts for all operations (+, -, x, ÷) for numbers 1-9.
6. The student must recognize basic operational notation.
7. The student must solve simple verbal problems using concrete objects (or pictorial representations).
8. The student must be able to read and write numerals to 1000.
9. The student must be able to identify place value to the thousands place.
10. The student must be able to perform all basic operations using zero.
11. The student must be able to do addition and subtraction ($n < 1000$).
12. The student must be able to perform multiplication using a one-digit multiplier.
13. The student must be able to solve simple verbal problems, i.e., problems involving only one operation.

The tasks that students must do to be successful with solving real-world problems involving whole numbers are listed below.

1. The student must be able to read the problem.
2. The student must be able to solve a one-step problem by adding three 3-digit numbers.
3. The student must be able to solve a practical one-step problem by subtracting two 3-digit numbers with one and only one regrouping step.
4. The student must be able to solve practical one-step problems by multiplying a 1-digit and a 3-digit number.

Sample items for the tasks required are demonstrated below.

Sample Items

1. Bob, Juan, and Ruth are on a dart team. One game Bob scored 380 points. Juan scored 142 points. Ruth scored 270 points. How many points did they score for their team?

   a. 412 points
   b. 692 points
   c. 792 points
   d. 6,192 points

2. There are 346 people going to the school play. If the room has 528 seats, how many seats will be left empty?

   a. 182 seats
   b. 222 seats
   c. 282 seats
   d. 874 seats

3. Kelly sold greeting cards to help the school. He sold 5 boxes of cards. Each box had 230 cards in it. How many cards did he sell?

   a. 1,050 cards
   b. 1,150 cards
   c. 1,155 cards
   d. 1,550 cards

PERCENT OF GRADE 5 STUDENTS IN THE STATE
RESPONDING CORRECTLY
TO THE MATH STANDARDS AND SKILLS[1]

	77-78	78-79	79-80	80-81	Ave.[2] Rank
A - THE STUDENT WILL COUNT QUANTITIES.	94 (14)	96 (15)	97 (13.5)	98 (13)	13.9
1. Identify the number of objects in a set of no more than 1000 objects.	94	96	97	98	
B - THE STUDENT WILL READ AND WRITE NUMERALS.	90 (13)	98 (16)	97 (13.5)	97 (12)	13.6
2. Read and write the numeral for any given whole number for 100 through 9,999.	90	95	96	96	
3. Read and write word names for whole numbers, zero through ten.		97	95	94	
4. Read and write money values through five dollars.					
C - THE STUDENT WILL ROUND NUMBERS.	63 (4)	76 (7)	85 (7.5)	87 (8)	6.6
5. Round a whole number less than 100 to the nearest ten.	63	76	85	87	
D - THE STUDENT WILL PUT NUMBERS IN ORDER.	82 (10.5)	92 (13)	85 (7.5)	86 (7)	9.5
6. Put in order any three whole numbers less than 1,000.	82	90	85	84	
7. Using a reference point, identify the ordinal position of any object in a set of 11 through 99 objects.		92	83	86	
E - THE STUDENT WILL DETERMINE EQUIVALENT FORMS OF FRACTIONS, DECIMALS AND PERCENTS.	73 (5)	83 (9)	91 (9)	89 (9)	8
8. Identify equivalent fractional parts of regions that have been separated into halves, fourths, fifths, eighths, or tenths.	73	83	91	89	
9. Identify one-half, one-third, or one-fourth of a set having no more than 12 objects, with no remainder.					

[1]The number in parentheses is the rank order of the students responding correctly to the standards.

[2]The number in the last column is the average rank order of the students responding correctly to the standards.

	77-78	78-79	79-80	80-81	Ave. Rank
F - THE STUDENT WILL ADD WHOLE NUMBERS.	86 (12)	89 (11)	94 (11)	92 (10.5)	11.1
10. Add four 3-digit numbers, without regrouping.	90	92	95		
11. Add four 3-digit numbers, with regrouping.	72	77	85	84	
12. Add a 3-digit number to a 1-, 2-, or 3-digit number.			93	91	
G - THE STUDENT WILL SUBTRACT WHOLE NUMBERS.	78 (8)	78 (8)	83 (6)	83 (6)	7
13. Subtract two 4-digit numbers without regrouping.	91	87	90	89	
14. Subtract two 4-digit numbers, with only one regrouping.	65	66	71	75	
H - THE STUDENT WILL MULTIPLY WHOLE NUMBERS.	75 (7)	91 (12)	93 (10)	92 (10.5)	9.9
15. Write basic multiplication facts, products through 81.		92	95	93	
16. Multiply a 1-digit and a 3-digit number.	75	85	83	83	
I - THE STUDENT WILL DIVIDE WHOLE NUMBERS.	53 (2)	62 (4)	64 (4)	64 (4)	3.5
17. Write basic division facts, products through 81.					
18. Divide a 3-digit number by a 1-digit number with remainder zero, without regrouping.	53	62	64	64	
J - THE STUDENT WILL ADD AND SUBTRACT FRACTIONS.	60 (3)	73 (5)	74 (5)	75 (5)	4.5
19. Add two proper fractions having like denominators, without simplification.	59	73	74	76	
20. Subtract two proper fractions having like denominators, without simplification.	77	81		84	
K - THE STUDENT WILL MULTIPLY FRACTIONS. (No skills expected to be mastered by beginning grade 5.)					
L - THE STUDENT WILL ADD AND SUBTRACT DECIMALS. (No skills expected to be mastered by beginning grade 5.)					

	77-78	78-79	79-80	80-81	Ave. Rank
M - THE STUDENT WILL MULTIPLY AND DIVIDE DECIMALS.					
(No skills expected to be mastered by beginning grade 5.)					
N - THE STUDENT WILL FIND PERCENTAGES.					
(No skills expected to be mastered by beginning grade 5.)					
O - THE STUDENT WILL MEASURE TIME, TEMPERATURE, DISTANCE, CAPACITY, AND WEIGHT	82 (10.5)	88 (10)	95 (12)	96 (11)	10.9
21. State the months of the year in order.		94	94	95	
22. State the date by month, day, and year, using a calendar.	63				
23. Determine his or her age in years.					
24. Tell time on the hour, half-hour, and quarter hour.	76	76	79	83	
25. Determine length, width, or height by measuring objects.*			96	97	
26. Determine length, width, or height by measuring objects with inches, feet, or yards. (*with centimeters or meters)					
P - THE STUDENT WILL IDENTIFY GEOMETRIC FIGURES AND SHAPES.					
(Skills mastered at previous progression levels are expected to be maintained with more difficult materials appropriate for this grade level.)					
Q - THE STUDENT WILL IDENTIFY THE VALUE OF COINS AND BILLS.	97 (15)	95 (14)	99 (15)	99 (14)	14.5
27. Determine equivalent amounts of up to five dollars using coins and paper currency.	97	95	99	99	
R - THE STUDENT WILL DETERMINE THE INFORMATION NEEDED TO SOLVE A PROBLEM.					
(No skills expected to be mastered by beginning grade 5.)					

	77-78	78-79	79-80	80-81	Ave. Rank
S - THE STUDENT WILL ESTIMATE SOLUTIONS BY ROUNDING. (No skills expected to be mastered by beginning grade 5.)					
T - THE STUDENT WILL SOLVE REAL-WORLD PROBLEMS INVOLVING WHOLE NUMBERS.	74 (6)	60 (3)	63 (3)	62 (3)	3.8
28. Determine the solution to real-world problems involving addition of three 3-digit numbers.	77	75	76	75	
29. Determine the solution to real-world problems involving subtraction of two 3-digit numbers, with only one regrouping.	79	51	53	49	
30. Determine the solution to real-world problems involving multiplication of a 1-digit number and a 3-digit number.					
U - THE STUDENT WILL SOLVE REAL-WORLD PROBLEMS INVOLVING FRACTIONS, DECIMALS, AND PERCENTS.		56 (2)			2
31. Determine the solution to real-world problems involving addition or subtraction of proper fractions with like denominators, without simplification.		56			
V - THE STUDENT WILL SOLVE MONEY PROBLEMS.	52 (1)	55 (1)	54 (2)	54 (2)	1.5
32. Determine the change to be received from a one dollar bill after the purchase of three items.	52	55	54	54	
W - THE STUDENT WILL SOLVE MEASUREMENT PROBLEMS USING METRIC AND CUSTOMARY UNITS. (No skills expected to be mastered by beginning grade 5.)					
X - THE STUDENT WILL INTERPRET GRAPHS, TABLES, AND MAPS.	79 (9)	75 (6)	39 (1)	40 (1)	4.3
33. Read and determine relationships described by pictographs or bar graphs expressed in whole units.	79	75	39	40	

Grade 8

At the eighth grade level, student performance on four standards appears to be particularly difficult. First, Standard O, "The student will measure time, temperature, distance, capacity, and weight" appears to be the area where student performance is weakest. Student performance on Standard J. "The student will add and subtract fractions" is the second weakest area. The third weak area is Standard M. "The student will multiply and divide decimals." The last weak area is Standard E. "The student will determine equivalent forms of fractions, decimals, and percents."

The reader should be aware that Standard O was assessed only during the 1977-78 academic year, and only one of the seven skills was assessed. That skill required the student to determine the temperature using Fahrenheit and Celsius thermometers.

The enabling skills for this task are listed below.

1. The student can count by 2's, 5's, and 10's to 100.

2. The student can read and write numerals (symbols) to 100.

3. The student can identify units and tens in a given numeral.

4. The student can identify place value to the thousands place.

5. The student can solve simple verbal problems using concrete objects (or pictorial representations).

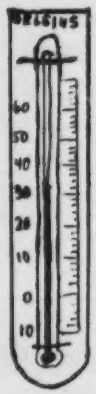
If the student has the enabling skills, he/she should be ready to learn to determine the temperature using the Fahrenheit and Celsius thermometers. The tasks required to perform this task are:

1. The student must be able to read the question.

2. The student must be able to identify the temperature indicated when given a picture of a thermometer.

3. When given a temperature, the student must be able to identify the picture of a thermometer indicating that temperature.

A sample item of the task required is given below.



Sample Item

What temperature is shown by the thermometer?

a. 31 C
b. 32 C
c. 33 C
d. 34 C

Enabling skills for Standard J, "The student will add and subtract fractions" are:

1. The student can recognize concrete representations of halves, thirds, fourths.
2. The student recognizes basic operational notation.
3. The student can select fractional parts of a whole (halves, thirds, fourths) and uses correct symbols.
4. The student can add and subtract using halves, thirds, and fourths.
5. The student can read and write numerals in fraction and mixed number notation.
6. The student can perform all basic operations with positive rational numbers.

If a student can perform the enabling skills, then the student is ready to learn to add and subtract proper fractions with unlike denominators.

The tasks required for being successful with these skills are:

1. The student must be able to read both horizontal and vertical notation.
2. The student must be able to convert two proper fractions having unlike denominators of 2, 3, 4, 5, 6, 8, or 10 to a common denominator.

Sample items for the tasks required are demonstrated below.

Sample Items

1. Add: $\frac{2}{3} + \frac{1}{5}$

a. $\frac{3}{8}$

b. $\frac{3}{15}$

c. $\frac{8}{15}$

d. $\frac{13}{15}$

2. Add: $\frac{3}{10}$

$+ \frac{1}{4}$

a. $\frac{1}{20}$

b. $\frac{11}{20}$

c. $\frac{4}{14}$

d. $\frac{4}{40}$

3. Subtract: $\frac{1}{2}$

$- \frac{3}{8}$

a. $\frac{2}{6}$

b. $\frac{1}{8}$

c. $\frac{2}{8}$

d. $\frac{7}{8}$

4. Subtract: $\frac{7}{8} - \frac{3}{5} =$

a. $\frac{4}{3}$

b. $\frac{4}{40}$

c. $\frac{3}{40}$

d. $\frac{11}{40}$

Eighth grade student performance is weak on Standard M, "The student will multiply and divide decimals." The enabling skills for Standard M are:

1. The student must be able to find the cardinal number of a set of concrete objects ($n \leq 20$).

2. Given a number ($n < 100$), the student can state $n + 1$.

3. The student must be able to identify the basic units of the decimal numeration system digits 0-9.

4. The student can identify <u>units</u> and <u>tens</u> in a given numeral.

5. The student must know the basic facts for all operations (+, -, x, ÷) for numbers 1-9.

6. The student recognizes basic operational notation.

7. The student can read and write numerals to 1000.

8. The student can identify place value to the thousands place.

9. The student can perform all basic operations using zero.

10. The student can multiply using a two-digit multiplier.

11. The student can divide using a two-digit divisor.

12. The student can read and write decimal numerals to the thousands.

If the student has the enabling skills, he/she should be ready to multiply and divide decimals. The tasks required to perform this task are:

1. The student must be able to solve a multiplication or division problem given in either horizontal or vertical notation.

2. The student must be able to multiply a whole number less than 100 with a decimal number less than ten with no more than two digits to the right of the decimal point.

3. The student must be able to multiply two decimal fractions with only one digit to the right of the decimal point.

4. The student must be able to multiply two decimal fractions with exactly two digits to the right of the decimal point.

5. The student must be able to divide when the dividend is a decimal fraction named in tenths or hundreths and the divisor is a multiple of ten but less than 100.

Sample items for the required tasks are listed below.

Sample Items

1. Multiply: 8 x .9 =

   a. .072
   b. .72
   c. 7.2
   d. 72

2. Multiply: 2.53 x 41

   a. 8.273
   b. 10.373
   c. 82.73
   d. 103.73

3. Multiply: 52 x .01

   a. .052
   b. .52
   c. 5.2
   d. 52

4. Multiply: .2 x .3 =

   a. .06
   b. .6
   c. 6.0
   d. 60

5. Multiply: .31 x .75

   a. 232.5
   b. 23.25
   c. 2.325
   d. .2325

6. Multiply: .32 x .05

   a. .016
   b. .16
   c. 1.6
   d. 160

7. Divide: $30\overline{).9}$

   a. .03
   b. .3
   c. 3
   d. 30

8. Divide: $20\overline{).92}$

   a. 46
   b. 4.6
   c. .46
   d. .046

9. Divide: .8 - 40 =

   a. .02
   b. .2
   c. .5
   d. 5

Student performance on Standard E is the last area identified as weak for eighth grade students. For this task, the student must determine equivalent forms of fractions, decimals, and percents. The enabling skills are:

1. The student must be able to demonstrate a one-to-one matching between the elements of given equivalency sets.

2. The student must be able to recognize equality and/or inequality of given sets of concrete objects (or pictorial representations).

3. When given a number ($n < 100$), the student can state $n + 1$.

4. The student must be able to identify basic units of the decimal numeration system digits 0-9.

5. The student must be able to read and write numerals (symbols) to 1000.

6. The student can recognize concrete representations of halves, thirds, fourths.

7. The student knows the basic facts for all operations (+, -, x, ÷) for numbers 1-9.

8. The student recognizes basic operational notation.

9. The student can identify place value to the thousands place.

10. The student can select fractional parts of a whole (halves, thirds, fourths) and can use concrete symbols.

11. The student can determine relationships between numbers and can use correct notation to show the relationship.

12. The student can perform all basic operations using zero.

13. The student can use addition and subtraction ($n < 100$).

14. The student can multiply using a 2-digit multiplier.

15. The student can divide using a 2-digit divisor.

16. The student can add and subtract using halves, thirds, and fourths.

17. The student can read and write decimal numerals to thousandths.

18. The student can read and write numerals in fractions and mixed numbers notation.

19. The student can perform basic operations with positive rational numbers.

20. The student is able to change a decimal to a common fraction and conversely.

If the student is capable of doing the enabling skills, then the student should be ready to learn to determine equivalent forms of fractions, decimals, and percents. The tasks required to do this skill are:

1. When given a proper fraction in fractional notation, the student must identify an equivalent fraction in fractional notation either by reducing or changing it to higher terms.

2. The student must be able to work with proper fractions having a denominator of 2, 3, 4, 5, 6, 8, 10, 20, 50, or 100.

3. When given a mixed number, the student must be able to identify the equivalent improper fraction.

4. When given a percent less than 100%, the student must identify an equivalent decimal number.

5. When given a fraction in fractional notation, the student must identify an equivalent decimal or percent.

Sample items for the tasks are listed below.

Sample Items.

1. $\frac{6}{10}$ means the same as:

   a. $\frac{36}{100}$

   b. $\frac{2}{5}$

   c. $\frac{2}{20}$

   d. $\frac{3}{5}$

2. Which means the same as $\frac{3}{20}$?

   a. $\frac{5}{100}$

   b. $\frac{9}{60}$

   c. $\frac{1}{5}$

   d. $\frac{9}{100}$

3. $\frac{5}{8}$ means the same in higher terms as:

   a. $\frac{15}{24}$

   b. $\frac{5}{4}$

   c. $\frac{8}{5}$

   d. $\frac{3}{24}$

4. $8\frac{3}{5}$ means the same as:

   a. $\frac{5}{43}$

   b. $\frac{29}{5}$

   c. $\frac{43}{5}$

   d. $\frac{83}{5}$

5. 73% means the same as:

a. .073
b. .73
c. 7.3
d. 73

6. Choose the decimal form that is equivalent to 7%.

a. .07
b. .7
c. 7.00
d. 70

7. $\frac{82}{100}$ means the same as:

a. .082
b. .12
c. .82
d. 1.2

8. Which means the same as $\frac{8}{10}$?

a. 8%
b. 12.5%
c. 45%
d. 80%

PERCENT OF GRADE 8 STUDENTS IN THE STATE
RESPONDING CORRECTLY
TO THE MATH STANDARDS AND SKILLS[1]

	77-78	78-79	79-80	80-81	Ave.[2] Rank
A - THE STUDENT WILL COUNT QUANTITIES. (Skills mastered at previous progression levels are expected to be maintained with more difficult materials appropriate for this grade level.)					
B - THE STUDENT WILL READ AND WRITE NUMERALS.	91 (14)				14
1. Read and write the numeral representing any whole number from ten thousand to less than ten million.					
2. Read and write fractions having denominators of 2, 3, 4, 5, 6, 8, 20, 25, 50, or 100.	91				
3. Read and write a mixed decimal through hundredths.					
4. Read and write money values through $1,000.					
5. Read and write word names for 3-digit whole numbers.					
C - THE STUDENT WILL ROUND NUMBERS.	54 (4)	75 (5.5)	76 (5)	80 (6.5)	5.3
6. Round a whole number less than 10,000 to any designated place.	54	75	76	80	
7. Round a number less than 10, with no more than two decimal places, to the nearest whole number.				73	
D - THE STUDENT WILL PUT NUMBERS IN ORDER.					
8. Put in order any three whole numbers less than 10,000.					

[1]The number in parentheses is the rank order of the students responding correctly to the standards.

[2]The number in the last column is the average rank order of the students responding correctly to the standards.

	77-78	78-79	79-80	80-81	Ave. Rank
E - THE STUDENT WILL DETERMINE EQUIVALENT FORMS OF FRACTIONS, DECIMALS, AND PERCENTS.	45 (2)	64 (3)	67 (4)	71 (4)	3.3
9. Identify a fraction that is equivalent to a given proper fraction having a denominator of 2, 3, 4, 5, 6, 8, 10, 20, 25, 50, or 100.	57	58	62	65	
10. Identify an improper fraction that is equivalent to a mixed number having a whole number component less than ten and a fractional component stated in halves, thirds, fourths, fifths, or tenths.		76	79	80	
11. State in decimal form the equivalent of a whole number percent less than 100%.		78	81	79	
12. Identify a decimal or percent that is equivalent to a proper fraction having a denominator of 10 or 100.	29	44	46	50	
F - THE STUDENT WILL ADD WHOLE NUMBERS.	95 (16)	95 (13)	95 (12)	96 (12)	13.3
13. Add any three 4-digit numbers.	95	95	95	96	
G - THE STUDENT WILL SUBTRACT WHOLE NUMBERS.	89 (13)	88 (11)	93 (11)	92 (10)	11.3
14. Subtract any two 5-digit numbers.	89	88	93	92	
H - THE STUDENT WILL MULTIPLY WHOLE NUMBERS.	83 (11)	87 (10)	90 (10)	90 (9)	10
15. Multiply a 2-digit number and a 3-digit number.	83	87	90	90	
I - THE STUDENT WILL DIVIDE WHOLE NUMBERS.	59 (6)	68 (4)	78 (6)	80 (6.5)	5.6
16. Divide a 3-digit number by a 1-digit number.		68	78	80	
17. Divide a 3-digit number by a multiple of 10 less than 100.	59				
J - THE STUDENT WILL ADD AND SUBTRACT FRACTIONS.	49 (3)	57 (2)	55 (2)	53 (1)	2
18. Add two proper fractions having unlike denominators of 2, 3, 4, 5, 6, 8, or 10.	48	57	54	50	

	77-78	78-79	79-80	80-81	Ave. Rank
19. Subtract two proper fractions having denominators of 2, 3, 4, 5, 6, 8, or 10.	50		55	55	
K - THE STUDENT WILL MULTIPLY FRACTIONS.	60 (7)	75 (5.5)	83 (8)	76 (5)	6.4
20. Multiply two proper and/or improper fractions.	60	75	83	76	
L - THE STUDENT WILL ADD AND SUBTRACT DECIMALS.	88 (12)	93 (12)	96 (13.5)	95 (11)	12.1
21. Add three numbers, each having no more than two decimal places.	86	93	92	93	
22. Subtract two numbers, each having no more than two decimal places.	84		93	91	
M - THE STUDENT WILL MULTIPLY AND DIVIDE DECIMALS.	56 (5)	52 (1)	53 (1)	64 (3)	2.5
23. Multiply a whole number and a number having no more than two decimal places.		66	67	74	
24. Multiply two decimal fractions both named in tenths or hundredths.	67	59	55		
25. Divide a decimal fraction named in tenths or hundredths by multiples of 10 less than 100.	39	44	49	51	
N - THE STUDENT WILL DIVIDE PERCENTAGES. (No skills expected to be mastered by beginning grade 8.)					
O - THE STUDENT WILL MEASURE TIME, TEMPERATURE, DISTANCE, CAPACITY, AND WEIGHT.	42 (1)				1
26. Tell time in hours and minutes.					
27. Determine length, width, or height by measuring objects to the nearest centimeter or meter, or ¼ inch, ½ foot, or yard.					
28. Determine capacity by measuring quantities in teaspoons, tablespoons, or gallons.					
29. Determine capacity by measuring quantities in metric cups and liters, or cups, pints, and quarts.					

	77-78	78-79	79-80	80-81	Ave. Rank
30. Determine weight by measuring to the nearest gram or ounce.					
31. Determine weight by measuring to the nearest kilogram or pound.					
32. Determine the temperature using Fahrenehit and Celsius thermometers.	42				
P - THE STUDENT WILL IDENTIFY GEOMETRIC FIGURES AND SHAPES.					
33. Identify plane geometric figures with no more than 8 sides.					
34. Identify solids: cube, cylinder, cone, and sphere.					
35. Identify an angle.					
Q - THE STUDENT WILL IDENTIFY THE VALUE OF COINS AND BILLS.					
36. Determine equivalent amounts of up to twenty dollars using coins and paper currency.					
R - THE STUDENT WILL DETERMINE THE INFORMATION NEEDED TO SOLVE A PROBLEM.					
37. In solving a real-world problem having one step, determine whether insufficient, sufficient, or extraneous information is given.					
S - THE STUDENT WILL ESTIMATE SOLUTIONS BY ROUNDING.					
38. Estimate the solution to a real-world addition problem involving up to 4-digit numbers rounded to the nearest ten, hundred, or thousand.					
39. Estimate the solution to a real-world subtraction problem involving up to 4-digit numbers rounded to the nearest ten, hundred, or thousand.					
T - THE STUDENT WILL SOLVE REAL-WORLD PROBLEMS INVOLVING WHOLE NUMBERS.	72 (8)	80 (7)	81 (7)	82 (7)	7.3
40. Determine the solution to real-world problems involving addition or subtraction of 4-digit numbers.	76	84	88		

	77-78	78-79	79-80	80-81	Ave. Rank
41. Determine the solution to real-world problems involving multiplication of a 2-digit number and a 3-digit number.	64	72	74	73	
42. Translate a one-step real-world problem into the appropriate sentence.			79	82	
U - THE STUDENT WILL SOLVE REAL-WORLD PROBLEMS INVOLVING FRACTIONS, DECIMALS, AND PERCENTS.					
43. Determine the solution to real-world problems involving multiplication of proper fractions.					
V - THE STUDENT WILL SOLVE MONEY PROBLEMS.	77 (10)	85 (9)	58 (3)	60 (2)	6
44. Determine the solution to real-world problems involving purchases totaling less than $10 with change from a $20 bill.	79	86			
45. Determine the solution to real-world problems involving comparison shopping for purchases of less than ten dollars.	63	73	58	60	
W - THE STUDENT WILL SOLVE MEASUREMENT PROBLEMS USING METRIC AND CUSTOMARY UNITS.	74 (9)	84 (8)	86 (9)	85 (8)	8.5
46. Solve linear measurement problems with centimeters, meters, inches, feet, or yards, using addition or subtraction with no conversion.	74	87	86	81	
47. Solve capacity problems with liters, cups, pints, quarts, using addition or subtraction with no conversion.					
48. Solve weight problems with grams, kilograms, ounces, or pounds, using addition or subtraction with no conversion.		84		84	
X - THE STUDENT WILL INTERPRET GRAPHS, TABLES, AND MAPS.	92 (15)	96 (14)	96 (13.5)	98 (13)	13.9
49. Read and determine relationships described by bar graphs or pictographs.	92	96	96	98	
50. Locate a point on a highway map.					

Grade 11

Student performance on two standards was especially weak for eleventh graders. Standard K, "The student will multiply fractions," and Standard U, "The student will solve real-world problems involving fractions, decimals, and percents," are the two weak areas for students. The enabling skills for Standard K are:

1. The student can identify the basic units of the decimal numeration system digits 0-9.

2. The student can identify units and tens in a given numeral.

3. The student can recognize concrete representations of halves, thirds, and fourths.

4. The student knows the basic facts for all operations (+, -, x, ÷) for numbers 1-9.

5. The student recognizes the basic operational notation.

6. The student can read and write numerals to 1000.

7. The student can select fractional parts of a whole (halves, thirds, fourths).

8. The student can perform all basic operations using zero.

9. The student can add and subtract ($n \leq 1000$).

10. The student can perform multiplication using a 2-digit multiplier.

11. The student can perform division using a 2-digit divisor.

12. The student can add and subtract using halves, thirds, and fourths.

13. The student can read and write numerals in fraction and mixed number notation.

If the student can perform the enabling skills, then he/she should be ready to multiply fractions. The tasks necessary for this skill are:

1. The student must be able to identify a multiplication problem in either horizontal or vertical notation.

2. The student must be able to multiply a whole number less than 100 and a mixed number less than 100, with the denominator in the fractional component less than ten or a multiple of ten less than 100.

Sample items for the task are listed below.

Sample Items

1. Multiply and rename in the simplest form: $16\frac{2}{3} \times 4$

   a. $2\frac{3}{2}$

   b. $64\frac{2}{3}$

   c. $66\frac{2}{3}$

   d. $66\frac{3}{2}$

2. Multiply and rename in simplest form: $34 \times 2\frac{5}{7}$

   a. $12\frac{10}{19}$

   b. $68\frac{5}{7}$

   c. $82\frac{4}{7}$

   d. $92\frac{2}{7}$

Student performance on Standard U is the second weak area identified for eleventh graders. The enabling skills for solving real-world problems involving fractions, decimals, and percents[1] are:

1. When given a number (n 100), the student can state n + 1.
2. The student can identify the basic units of the decimal numeration system digits 0-9.
3. The student can read and write numerals (symbols) to 1000.
4. The student can identify units and tens in a given numeral.
5. The student can recognize concrete representations of halves, thirds, and fourths.
6. The student knows the basic facts for all operations (+, -, x, ÷) for numbers 1-9.
7. The student can solve simple verbal problems using concrete objects (or pictorial representations).
8. The student can select fractional parts of a whole (halves, thirds, fourths) and can use correct symbols.
9. The student can perform all basic operations using zero.
10. The student can add and subtract (n 1000).
11. The student can multiply using a 2-digit multiplier.
12. The student can divide using a 2-digit divisor.
13. The student can add and subtract halves, thirds, and fourths.

[1]Only student performance on fractions was assessed on the SSAT-I.

14. The student can read and write numerals in fraction and mixed number notation.

15. The student can perform all basic operations with positive rational numbers.

If a student is able to perform the enabling skills, then he/she should be ready to learn to solve real-world problems involving fractions. The tasks that are necessary for this skill are:

1. The student must be able to read the word problem.

2. Given a description of a situation, the student is required to add or subtract proper fractions with unlike (denominators) in a one-step problem.

Sample Items

1. Charlie lives $\frac{2}{5}$ of a mile from school. Dorothy lives $\frac{1}{3}$ of a mile from school. Charlie lives how much farther from school than Dorothy?

   a. $\frac{1}{15}$ of a mile

   b. $\frac{1}{2}$ of a mile

   c. $\frac{3}{8}$ of a mile

   d. $\frac{11}{15}$ of a mile

2. Mike spent $\frac{1}{4}$ of his salary on fuel for his car. He also spent $\frac{2}{5}$ of his salary on insurance for his car. What fraction of Mike's salary was spent on insurance and fuel for his car?

   a. $\frac{2}{20}$ of his salary

   b. $\frac{3}{20}$ of his salary

   c. $\frac{13}{20}$ of his salary

   d. $\frac{3}{9}$ of his salary

PERCENT OF GRADE 11 STUDENTS IN THE STATE RESPONDING CORRECTLY TO THE MATH STANDARDS AND SKILLS[1]

	77-78	78-79	79-80	80-81	Ave.[2] Rank
A - THE STUDENT WILL COUNT QUANTITIES. (Skills mastered at previous progression levels are expected to be maintained with more difficult materials appropriate for this grade level.)					
B - THE STUDENT WILL READ AND WRITE NUMERALS. (Skills mastered at previous progression levels are expected to be maintained with more difficult materials appropriate for this grade level.)					
C - THE STUDENT WILL ROUND NUMBERS.	70 (3)	78 (5.5)	82 (5)	77 (4)	4.4
1. Round a number less than 100 with no more than three decimal places to any designated place.	61	76	78	75	
2. Round a mixed number with a whole number component less than 100 to the nearest whole number.	68	69	77	67	
D - THE STUDENT WILL PUT NUMBERS IN ORDER.	95 (8)	94 (10)	97 (11)	95 (11)	10
3. Put in order any three whole numbers through millions.	95	94	97	95	
E - THE STUDENT WILL DETERMINE EQUIVALENT FORMS OF FRACTIONS, DECIMALS, AND PERCENTS.	78 (5)	89 (8)	91 (9)	90 (9)	7.8
4. Identify an improper fraction that is equivalent to a mixed number.	84	92	95	95	
5. Identify a mixed number having a whole number component less than 100 that is equivalent to an improper fraction.		93	95	94	

[1]The number in parentheses is the rank order of the students responding correctly to the standards.

[2]The number in the last column is the average rank order of the students responding correctly to the standards.

	77-78	78-79	79-80	80-81	Ave. Rank
6. Identify a decimal or percent that is equivalent to a proper fraction having a denominator of 2, 3, 4, 5, 20, 25, 50, or 100.	62	65	66	57	
F - THE STUDENT WILL ADD WHOLE NUMBERS. (Skills mastered at previous progression levels are expected to be maintained with more difficult materials appropriate for this grade level.)					
G - THE STUDENT WILL SUBTRACT WHOLE NUMBERS. (Skills mastered at previous progression levels are expected to be maintained with more difficult materials appropriate for this grade level.)					
H - THE STUDENT WILL MULTIPLY WHOLE NUMBERS.	89 (7)	92 (9)	93 (10)	94 (10)	9
7. Multiply two 3-digit numbers.	89	92	93	94	
I - THE STUDENT WILL DIVIDE WHOLE NUMBERS.	80 (6)	82 (7)	83 (6)	77 (4)	5.8
8. Divide a 5-digit number by a 2-digit number.	80	82	83	77	
J - THE STUDENT WILL ADD AND SUBTRACT FRACTIONS.	64 (2)	73 (4)	78 (4)	78 (6)	4
9. Add two mixed numbers having whole number components less than 100, with denominators of 2, 3, 4, 5, 6, 8, or 10.	71	74	79	79	
10. Subtract a whole number and a mixed number with denominators of 2, 4, 6, 8, and 10.	56	60	66	64	
11. Subtract two mixed numbers with denominators of 2, 4, 6, 8, and 10.	66	76	78	83	
K - THE STUDENT WILL MULTIPLY FRACTIONS.		59 (1)	61 (1)	58 (1)	1
12. Multiply a whole number and a mixed number.		59	61	58	

	77-78	78-79	79-80	80-81	Ave. Rank
I. - THE STUDENT WILL ADD AND SUBTRACT DECIMALS. (Skills mastered at previous progression levels are expected to be maintained with more difficult materials appropriate for this grade level.)					
M - THE STUDENT WILL MULTIPLY AND DIVIDE DECIMALS.	72 (4)	80 (6)	84 (7)	85 (8)	6.3
13. Multiply two numbers, each having no more than two decimal places.	81	89	93	90	
14. Divide two numbers, each having no more than two decimal places.	59	65	70	73	
N - THE STUDENT WILL FIND PERCENTAGES.	54 (1)	64 (2)	76 (3)	77 (4)	2.5
15. Multiply a whole number and a whole number percent less than 100.		68	77	80	
16. Multiply a number with no more than two decimal places and a whole number percent less than 100.	54	66	71	70	
O - THE STUDENT WILL MEASURE TIME, TEMPERATURE, DISTANCE, CAPACITY, AND WEIGHT.					
17. Determine the elapsed time between two events stated in seconds, minutes, hours, days, weeks, months, or years.					
18. Determine length, width, or height by measuring objects to the nearest millimeter or 1/8 inch.					
19. Estimate the length, width, or height of an object in millimeters, centimeters, feet, or inches.					
20. Determine capacity by measuring quantities in milliliters.					
21. Estimate capacity in milliliters, liters, cups, or quarts.					
22. Estimate mass/weight in grams, kilograms, ounces, or pounds.					

	77-78	78-79	79-80	80-81	Ave. Rank
23. Identify the freezing and boiling points of water, normal body temperature, and comfortable room temperature in Celsius or Fahrenheit.					
P - THE STUDENT WILL IDENTIFY GEOMETRIC SHAPES AND FIGURES. (Skills mastered at previous progression levels are expected to be maintained with more difficult materials appropriate for this grade level.)					
Q - THE STUDENT WILL IDENTIFY THE VALUE OF COINS AND BILLS.					
24. Determine equivalent amounts of up to one hundred dollars using coins and paper currency.					
R - THE STUDENT WILL DETERMINE THE INFORMATION NEEDED TO SOLVE A PROBLEM.					
25. In solving a real-world problem having two steps, determine whether insufficient, sufficient, or extraneous information is given.					
S - THE STUDENT WILL ESTIMATE SOLUTIONS BY ROUNDING.					
26. Estimate the solution to a real-world problem by rounding to the appropriate place.					
27. Estimate the solution to a real-world multiplication problem involving two 2-digit numbers rounded to the nearest ten and/or two 3-digit numbers rounded to the nearest hundred.					
28. Estimate the solution to a real-world division problem involving a 2-digit whole number divisor and a 3-digit whole number dividend, each rounded to the nearest ten.					
T - THE STUDENT WILL SOLVE REAL-WORLD PROBLEMS INVOLVING WHOLE NUMBERS.		78 (5.5)	86 (8)	84 (7)	6.8

	77-78	78-79	79-80	80-81	Ave. Rank
29. Determine the solution to a real-world problem involving averages of no more than ten numbers and no more than two distinct operations.		78	86	84	
30. Determine the solutions to real-world problems involving one or two distinct whole number operations.					
U - THE STUDENT WILL SOLVE REAL-WORLD PROBLEMS INVOLVING FRACTIONS, DECIMALS AND PERCENTS.		65 (3)	73 (2)	67 (2)	2.33
31. Determine the solution to real-world problems involving addition or subtraction of proper fractions with unlike denominators of 2, 3, 4, 5, 6, 8, or 10.		65	73	67	
32. Determine the solution to real-world problems involving decimal fractions or percents and one or two distinct operations.					
V - THE STUDENT WILL SOLVE MONEY PROBLEMS.					
33. Determine the solution to real-world problems involving comparison shopping.					
34. Determine the solution to real-world problems by finding the amount of simple interest.					
35. Determine the solution to real-world problems involving purchases and a rate of sales tax.					
36. Determine the solution to real-world problems involving purchases and a rate of discount given in fraction or percent form.					
W - THE STUDENT WILL SOLVE MEASUREMENT PROBLEMS USING METRIC AND CUSTOMARY UNITS.					
37. Solve a problem related to length, width, or height, using metric, or customary units up to kilometers or miles, conversion within the system.					

	77-78	78-79	79-80	80-81	Ave. Rank
38. Solve a problem involving the perimeter or area of a rectangular region using metric or customary units.					
X - THE STUDENT WILL INTERPRET GRAPHS, TABLES, AND MAPS.					
41. Read and determine relationships described by line graphs, circle graphs, or tables.					
42. Find the approximate distance between two given points on a highway map, using a scale.					

SUMMARY

Reading

Student performance on Standards B, J, and I are consistently low. Standard B assesses a student's ability to determine word meaning from the way the word is used in a passage. Standard I assesses a student's ability to recognize fantasy, fact, and opinion in a message, and Standard J assesses a student's ability to recognize irrelevant and invalid statements. These areas of weakness are all comprehension skills that teachers can assist the students in improving.

Student performance on Standard H shows significant improvement in grades 8 and 11 in comparison with grades 3 and 5. Student performance on Standard E is weak at grade 5, but it is not a weakness in grades 8 and 11. These areas that appear to be weak in the lower grades are no longer considered weaknesses as the students progress in reading.

Mathematics

Student performance is consistently low on Standards J, U, and V. Standard J assesses a student's ability to add and subtract fractions, Standard U assesses the student's ability to solve real-world problems involving fractions, decimals, and percents, and Standard V assesses a student's ability to solve money problems. There is a relationship among these three standards. For example, Standards J and U both involve fractions, and since money problems usually involve computing with decimals, greater emphasis in the classrooms on fractions and decimals should improve student performance on these weak areas.

Student performance steadily improved on Standard E as the students progressed through the grades. Standard E assesses a student's ability to determine equivalent forms of fractions, decimals, and percents. Student performance on this standard was very low at grades 3 and 5 and at least satisfactory at grades 8 and 11. It should be noted that different skills were tested at the different grade levels. At grade 3 the students are tested on identifying fractional parts of regions that have been separated into halves, thirds, and fourths. At grade 5, the students are tested on identifying equivalent fractional parts of regions that have been separated into halves, fourths, fifths, eighths, or tenths and on identifying one-half, one-third, or one-fourth of a set having no more than 12 objects, with no remainder.

AVERAGE RANK ORDER OF READING STANDARDS
AT GRADES 3, 5, 8, and 11

	3	5	8	11	Ave. Rank[1]
A - The student will acquire a basic vocabulary as determined by a specified word list.	8.5	9.5	3.5	4.75	6.56
B - The student will determine word meaning from the way the word is used in a passage.		1.83	2.63	3	2.49
C - The student will determine word meaning from a knowledge of word parts as used in given context.	6.83	4.75	8.33	4.88	6.2
D - The student will determine whether different selections have similar meanings.		4.33			4.33
E - The student will determine the main idea of a message.		1.67	3.63	7.13	4.14
F - The student will find information in a message.	5.88	5.88	6.5	7.33	6.4
G - The student will determine the causes and effects of events and actions.	5.83	7.25			6.54
H - The student will determine the logical generalizations which can be drawn from a message.	2.5	4.75	8.67	7	5.73
I - The student will recognize fantasy, fact, and opinion in a message.	4		1.5	3	2.83
J - The student will recognize irrelevant and invalid statements.	1	5.88	1	3.25	2.78
K - The student will follow oral and written directions.	5.13	5.33	6.25	9.25	6.49
L - The student will identify appropriate sources for needed information.		9.5	9.5	8.75	9.25
M - The student will use appropriate reference skills.	4.25	4.5	5.75	5	4.88

[1] The number in the last column is the average of the average rank order of the students in grades 3, 5, 8, and 11.

AVERAGE RANK ORDER OF MATH STANDARDS
AT GRADES 3, 5, 8, and 11

	3	5	8	11	Ave. Rank[1]
A - The student will count quantities.	7.63	13.9			10.77
B - The student will read and write numerals.	9	13.6	14		12.2
C - The student will round numbers.		6.6	5.3	4.4	5.43
D - The student will put numbers in order.	7.75	9.5		10	9.08
E - The student will determine equivalent forms of fractions, decimals, and percents.	1.67	8	3.3	7.8	5.19
F - The student will add whole numbers.	6.5	11.1	13.3		10.3
G - The student will subtract whole numbers.	3	7	11.3		7.1
H - The student will multiply whole numbers.		9.9	10	9	9.63
I - The student will divide whole numbers.		3.5	5.6	5.8	5.0
J - The student will add and subtract fractions.		4.5	2	4	3.5
K - The student will multiply fractions.			6.4	1	3.7
L - The student will add and subtract decimals.			12.1		12.1
M - The student will multiply and divide decimals.			2.5	6.3	4.4
N - The student will find percentages.				2.5	2.5
O - The student will measure time, temperature, distance, capacity, and weight.	5	10.9	1		5.63

[1]The number in the last column is the average of the average rank order of the students in grades 3, 5, 8, and 11.

	3	5	8	11	Ave. Rank
P - The student will identify geometric figures and shapes.	6				6
Q - The student will identify the value of coins and bills.	5.33	14.5			9.9
R - The student will determine information needed to solve a problem.					
S - The student will estimate solutions by rounding.					
T - The student will solve real-world problems involving whole numbers.	3.5	3.8	7.3	6.8	5.35
U - The student will solve real-world problems involving fractions, decimals, and percents.		2		2.33	2.17
V - The student will solve money problems.	12.5	1.5	6		2.92
W - The student will solve measurement problems using metric and customary units.			8.5		8.5
X - The student will interpret graphs, tables, and maps.		4.3	13.9		9.1

RECOMMENDATIONS

The following recommendations are based on the student needs in reading and mathematics as determined from the analysis presented in this paper, from Department of Education personnel, and from the educators who participated in the on-site visitations. Nine counties were visited; all educators who participated in those visitations were in agreement with the findings in this project and with the recommendations that were made regarding student and teacher needs.

Recommendations for Teachers

1. To improve student performance on Reading Standard B, teachers need to focus on the skill of using context clues. In the lower elementary grades the two types of context clues to be concentrated on are definition clues and synonym clues (see Appendix A, Problems 1 and 2). Middle and junior high school teachers need to concentrate on definition and synonym clues not only at the sentence level, but also at the paragraph level. In addition, summary clues and comparison and contrast clues are also necessary (see Appendix A, Problem 3). The summary clue occurs when a word or phrase summarizes the ideas that precede it; the comparison and contrast clue occurs when a word is compared or contrasted with something known. Teachers in the high schools need to work on the four previously mentioned clues as well as a mood or situation clue. A mood or situation clue provides a clue to a word through the general tone of the sentence or paragraph.

   Work on skills developing the use and understanding of context clues is greatly needed. It should be noticed; however, that on an enabling skill for this task, associating in isolation words which are the same or opposite in meanings, students perform very well. Since students perform well with words in isolation, it appears to this investigator that teachers need to assist students in identifying context clues within a sentence or paragraph to determine the meanings of unknown words.

2. Both Reading Standards I and J fit into the category of logical thinking. For Standard I, primary grade teachers working with recognizing fantasy, fact, and opinion in a message need to be able to teach the students to distinguish between what is real and what is unreal (see Appendix A, Problem 5). Teachers in grades 4 and 5 not only need to focus on what is real and unreal but also need to teach students to distinguish between fact and opinion (see Appendix A, Problem 6). Junior high school teachers need to work not only on distinguishing what is real and unreal and distinguishing between fact and opinion, (see Appendix A, Problems 7 and 8) but also on having students identify an unstated opinion. The previously mentioned areas also need to be focused on by high school teachers (see Appendix A, Problems 9 and 10).

3. For Reading Standard J, the student needs to be able to identify an irrelevant statement in a selection. Primary grade teachers need to be able to assist the student in identifying the irrelevant sentence in a given paragraph (see Appendix A, Problem 11). Upper elementary teachers need to help students identify both the irrelevant sentence in a paragraph and the invalid statement in a given paragraph (see Appendix A, Problems 12 and 13). High school teachers need not

only to work on the previously mentioned skills for Standard J but also to work on identifying inaccurate assumptions. Students will need to be able to identify an assumption which cannot be assumed to be true based on the information presented in a paragraph (see Appendix A, Problems 16, 17, and 18).

Since other comprehension skills at the various levels were adequate, these two areas show the greatest needs; therefore, teachers need to work on improving these skills at all grade levels.

4. In the area of mathematics, teachers need to be able to assist students in adding and subtracting fractions, a skill being assessed by Standard J. Elementary teachers need to focus on having the student add and subtract two proper fractions having like denominators, without simplification (see Appendix B, Problems 1, 2, 3, and 4). Students in the elementary grades had more trouble with the addition of proper fractions than they did with subtraction because the primary distractor was removed from the subtraction of fraction problems; however, both areas need improvement. Eighth grade students had considerable trouble both adding and subtracting two proper fractions having unlike denominators of 2, 3, 4, 5, 6, 8, or 10 (see Appendix B, Problems 5, 6, 7, and 8). It should be pointed out that eighth grade students had considerable difficulty with Standard E, determining equivalent forms of fractions, decimals, and percentages. Eighth grade students were particularly weak in identifying a fraction that was equivalent to a proper fraction having a denominator of 2, 3, 4, 5, 6, 8, 10, 20, 25, 50, or 100. More than 75 percent of the eighth grade students mastered skills E-10 and E-11; however, E-9 would appear to be an enabling skill for Standard J. Therefore, junior high teachers should focus first of all upon teaching students to identify a fraction that is equivalent. At the eleventh grade level of Standard J, students were particularly weak on subtracting a whole number and a mixed number with a denominator of 2, 4, 6, 8, and 10. Specifically, the teachers need to focus on the task required for Standard J, Skill 10, because student performance on the enabling skills is intact for eleventh grade students (see Appendix B, Problems 9, 10, 11, 12, 13, and 14).

5. Elementary teachers need to concentrate on math word problems involving addition or subtraction of proper fractions with like denominators, without simplification (see Appendix B, Problem 15). Standard U had an average ranking of 2.0 and 2.33 for grades 5 and 11, respectively. The skill under Standard U, tested at the grade 5 level (U-31), involves the addition and subtraction of proper fractions with like denominators. The skills tested under Standard U at the grade 11 level (U-31 and U-32) requires the student to solve real-world problems involving addition or subtraction of proper fractions with unlike denominators of 2, 3, 4, 5, 6, 8, or 10 (see Appendix B, Problems 17 and 18). This involves the students solving practical one-step problems. It should be noted that both Standards J and U require the students to add and subtract fractions; in both cases, students throughout the grades were weak.

6. Elementary teachers need to concentrate on math word problems involving money, Standard V, with emphasis on problems involving subtraction. Standard V had an average ranking of 1.25 and 1.5 for grades 3 and 5 respectively. The only skill under Standard V tested all four years at the grade 3 level (V-24) involves subtraction with amounts less than 50¢. Although performance on the grade 3 subtraction standard was above 80% all four years, it had only an average ranking of 3.0; mastery of the skill requires the subtraction of two-digit numbers (an enabling skill for V-24), which was below 80% all four years. The skill tested under Standard V at the grade 5 level (V-32) involves the addition of three purchase prices and subtraction of that sum from $1.00. Although the grade 5

subtraction standard had an average ranking of 7.0, it was tested by both a skill not requiring regrouping and a skill requiring regrouping. Over the four years the mastery rates of the skill with regrouping have been 75% or below, considerably lower than the skill not requiring regrouping.

This would suggest that teachers need to work on subtraction using regrouping (see Appendix B, Problems 22 and 23). The skill under Standard V that was weak at the grade 8 level (V-45) requires the student to solve realistic problems that deal with comparison shopping, students must be able to find and compare unit costs and costs for another specified quantity for purchases less than $10.00. This area was particularly weak for grade 8 students and will require a considerable amount of work on the teachers' part in order for the students to understand this process (see Appendix B, Problems 24, 25, and 26).

The following recommendations for teachers were made by Department of Education personnel and educators who participated on the on-site visits. These recommendations are more general than the previously made recommendations.

Teachers need:

1. to demonstrate commitment to the improvement of student performance in basic skills and must be willing to participate in in-service workshops concerned with improving student performance in the basic skills.

2. to know and understand the enabling skills. One of the biggest stumbling blocks to students' learning is that teachers quite often have students drill-and-practice on the weak standards when the students do not have the enabling skills to perform the higher level standard.

3. in-service on effective strategies for teaching students about money. Primary grade students confuse size and quantity of money.

4. to recognize that basic skills are tools to an end, not a means to an end. Quite often students improve their skills; they must learn, however, to apply those skills. Teachers need assistance in teaching students to apply the skills.

5. an error-analysis workshop, utilizing the students' responses on the multiple choice test, this would be an appropriate means for assisting teachers to understand some specific deficiencies in the basic skills.

6. to be able to use appropriate multi-level instructional materials and a diversity of teaching strategies.

7. to be involved in analyzing deficiencies and providing for the development of the enabling skills needed to master the SSAT standards. For example, teachers at the K, 1, and 2 grade levels need to develop those enabling skills that are needed to master a skill measured at the third grade level.

8. to have access to a variety of instructional activities and materials and they should use alternative activities when teaching skills.

9. to be able to interpret, as well as to design, evaluative measures in order to assess each student's strengths and weaknesses.

School Administrators

District Level

Administrators should provide:

1. adequate time (possibly during the summer) for mathematics and communication teachers to develop instructional materials, particularly for those skills where students have the greatest weaknesses. These teachers should utilize the resource documents and materials which have been provided through the Department of Education.

2. workshops for grade level teachers, familiarizing those teachers with instructional methods and materials keyed to the state standards as well as the type of workshop mentioned in #6 of the previous section.

Building Level

Principals should support the improvement of basic skills by:

1. demonstrating total commitment to the improvement of student performance in basic skills.

2. becoming more cognizant of the basic skills and of the needs of teachers.

3. updating their own skills so they are knowledgeable and communicate with teachers in these curriculum areas and can provide viable leadership.

4. insuring that teachers maintain their professional growth through effective in-service, participate in professional organizations related to basic skills areas, and keep an up-to-date collection of professional journals.

5. providing teachers with appropriate basic and support materials for each basic skill area.

6. maintaining a physical environment within the school building that is conducive to learning.

7. providing reasonable class size and trained paraprofessionals (supplemented by volunteers) for basic skills instruction.

8. finding effective ways to assist teachers in keeping record maintenance and paperwork to a minimum.

9. monitoring supplemental programs (including summer school) to insure that the right students are there and receiving appropriate instruction.

10. requiring teachers to carry out basic skills instruction through pedagogy that continually maintains a balance between activity-oriented concept development activities and drill-and-practice or rote memory skills. This instruction should be within a total framework that encourages students to go "beyond the basics".

11. providing staff development activities that emphasize instructional strategies for incorporating basic skills in all subject areas.

12. providing for the releasing of teachers for in-service and professional meetings, as well as intraschool and interschool visits with "master" teachers.

Colleges of Education

Pre-service education should include:

1. classroom management techniques.

2. other instructional design functions such as being able to break down terminal objectives into enabling objectives.

3. matching methods with expected standards and sequencing instructional activities based upon the enabling skills.

4. providing experience in planning and teaching in a sequential program of instruction. Pre-service teachers really need to be aware of the scope and sequence in reading and mathematics.

5. designing evaluation measures which indicate whether basic skills have been mastered or whether re-teaching is necessary.

Colleges of Education should provide in-service through the Teacher Education Centers and focus on:

1. instructional design principles.

2. constructing evaluation procedures, sequencing instruction, and analyzing student characteristics.

3. providing teachers with assistance in being able to interpret test results and explaining those results to parents in a positive and constructive manner; and to utilize test data in planning, developing, and implementing the instructional program.

4. providing clinical, simulated, and direct experiences for analyzing student characteristics and providing for learner differences from a pragmatic standpoint.

Department of Education Personnel

Department of Education personnel should:

1. coordinate a clearinghouse for basic skills instructional materials, particularly on comprehension skills and word problems as identified in this paper.

2. continue dissemination conferences.

3. provide management training workshops for school administrators that emphasize curriculum development in basic skills.

4. continue to provide item specifications for each skill as a reference in each school district.

5. continue the Florida linkage system.

6. provide conferences for teachers and administrators to assist with the basic skills areas identified in this paper as needing improvement, as well as providing assistance with identifying materials for the enhancement of the enabling skills.

7. continue grants such as the Basic Skills Grant (Title II) and the Improvement Grants (Title IV-C).

8. continue to develop materials regarding basic skills, such as A Resource Book for Teaching 5th Grade Minimal Skills in Mathematics (1981).

9. continue to develop materials regarding skills clarification, enabling skills and prerequisite skills in reading, such as Teaching the Minimum Student Performance Standards Reading (1980).

10. continue to develop materials regarding reading skills, such as Teaching Vocabulary Skills (1981).

11. continue to disseminate materials in cooperation with ITV regarding reading skills, such as Teaching Early Reading and the companion six thirty minute video cassette tapes (1979).

12. develop materials in the area of reading regarding literal comprehension, inferrential comprehension and study skills.

All those concerned with teacher training must be certain that all pre-service and in-service teachers possess and demonstrate mastery of the skills of reading, the process of reading, understand the implications for classroom instruction and effective teaching. For example, through simulated activities such as student demonstration teaching, actual classroom instruction at the university laboratory and developmental research schools and throughout schools within the various districts; and by using clinical supervision techniques candidates would be required to demonstrate successful performance in teaching students the skills of reading and the application of those skills.

Further, those concerned with teacher training must determine that appropriate teaching and verification of all persons receiving university or in-service credit have knowledge and demonstrate understanding of evaluative data, interpretation and utilization of such data with appropriate implications for effective classroom instruction. School districts must be certain that appropriate staff development opportunities are provided in which teachers participate to develop and enhance teacher skills in the effective teaching of the basic skills. Suggestions indicated above for teacher training institutions are equally appropriate to district staff development except that personnel in universities earn course and degree credit and those participating in district sessions earn in-service points for extension of certificate. In each instance the quality of the program and the requirements for demonstrating competence should be commensurable among universities and districts.

Appendix A

Sample Items for Reading Standards Mentioned in the Recommendations Section

Standard B

Grade 5

(Definition Clue)

Directions: Read the following sentences and choose the best meaning for the underlined word.

1. On most ships people take turns on watch. A watch is four hours of duty spent keeping track of events on board. Each man or woman on watch has an important job to do.

   a. sleeping time
   b. play time
   c. guard time
   d. picnic time

(Synonym Clue)

2. John is playing with his top. When he throws it to the ground it spins or whirls.

   a. turns
   b. stops
   c. hops
   d. walks

Grade 8

(Summary Clue)

Directions: Read the sentences and choose the best meaning for the underlined word.

3. Sally and I picked tomatoes for the salad, while Bob chose the ripest beans to cook with the ham. Dad picked berries to put in the pudding. We all enjoyed the harvest from our garden.

   a. walk home
   b. flowers
   c. vegetables and fruit
   d. cool wind blowing

Grade 11

(Synonym Clue)

Directions: Read the sentences and choose the best definition for the underlined word.

4. The designer brought out a line of unusual fashions. His novel designs became very popular.

   a. lightweight and revealing
   b. executive
   c. new and different
   d. ordinary

Standard I

Grade 3

Directions: Read the story and mark the answer that could not really happen.

5. Billy had a toy cat made out of wood. It was black and white. Billy liked to play with it in his yard. One day the toy cat had kittens.

   What could not really happen?

   a. Billy had a toy cat made out of wood.
   b. Billy liked to play with the cat.
   c. One day the cat had kittens.
   d. The cat was black and white.

Grade 5

Directions: Read the story and choose the sentence that is an opinion.

6. Ken just paid $35 for a new blue and silver ten-speed bike. He earned the money himself cutting grass last summer. Ken thinks his bike is the nicest bike in town. He takes very good care of it and does not let anyone else ride it.

   Which sentence is an opinion?

   a. Ken paid $35 for a new ten-speed bike.
   b. The bike is blue and silver.
   c. It .s the nicest bike in town.
   d. Ken does not let anyone else ride the bike.

Grade 8

Directions: Read the story and choose the sentence which is an opinion.

7. Ann's family purchased a new red car for $7,000. They selected a station wagon so that the entire family could ride in it comfortably. The car has three seats that each hold three people, so that altogether nine people can ride in the car. Ann thinks it is really fun to take eight of her friends for a ride in the new car.

Which sentence is an opinion?

a. Ann's family purchased a new red car for $7,000.
b. The new car has three seats that can each hold three people.
c. It is fun to take Ann's friends riding in the new car.
d. Altogether nine people can ride in the new family car.

Directions: Read the paragraph and choose the sentence which best reflects Ms. Truitt's opinion.

8. Six weeks ago the school cafeteria began serving breakfast each morning before school began. They serve orange juice and milk to drink, and toast, bacon and eggs to eat. Ms. Truitt noticed that the students in her morning class seemed more energetic and attentive. She discussed this change with her students. She found that many of them never ate breakfast at home, but would now eat in the cafeteria with friends. Other students used to stop on the way to school and buy candy and sodas instead of eating breakfast. These students are going to the cafeteria to eat in the mornings.

Which sentence best reflects Ms. Truitt's opinion?

a. The school she teaches in is very modern.
b. Schools should not serve breakfast to students.
c. A good breakfast can improve your ability to work at school.
d. The lunches served in the school cafeteria are not very tasty.

Grade 11

Directions: Read the paragraph and choose the sentence that is an opinion.

9. Our school's football team has won seven games this season. It is ranked number 4 in the state. The team will go to the state playoffs if we win the next three games we play. There are lots of good players on the team this year. Most people in town think this is the best football team our high school has ever had. The games are always exciting, and there is a large crowd at every game. Most people have season tickets because it is so hard to get tickets for just one game.

Which statement is an opinion?

a. Our school's football team is ranked 4th in the state.
b. There is a large crowd at every game.
c. The team has won seven games this year.
d. This year's football team is the best our school has ever had.

Directions: Read the paragraph and choose the sentence which best reflects Chris's opinion.

10. Chris and Pat decided to go camping together. Chris had been camping several times before, but only with someone else in charge. Pat had never been camping so, as a result, Chris was a little nervous. Chris was upset when the flashlight didn't work, but Pat didn't mind playing cards by candlelight. The day they took out a small boat to explore the swamp, a fuel line clogged and they had to be towed back. Chris wasn't embarrassed, but was worried that Pat would be upset and not want to take out another boat. Pat, however, was eager to go back out, so they took turns running the boat and relaxing as they cruised through the swamp. Words were rarely spoken except to point out things of interest like an eagle's nest or a snake curled in the roots of a tree. Chris felt slightly guilty about being quiet. She was relieved when Pat said how good it was to be with someone that you could share time with and not always have to be talking. Even the rain and the insects failed to spoil the weekend. Both women had such a good time that they are eagerly planning their next camping trip.

Which sentence best reflects Chris's opinion?

a. Never go camping with someone who has never been camping before.
b. Women should not go camping alone.
c. Pat was a good companion to share the camping trip with.
d. Pat was a very competent professional woman.

Standard J

Grade 3

Directions: Read the story. Mark the sentence that does NOT belong in the story.

11. John loves his cat. The cat's name is Frosty. Frosty likes to sleep a lot. John likes to ride his bike.

Which sentence does NOT belong in the story?

a. John loves his cat.
b. The cat's name is Frosty.
c. John rides his bike.
d. Frosty likes to sleep a lot.

Grade 5

Directions: Read the story and find the sentence that does NOT belong in the story.

12. John loves baseball. He has a new baseball glove. He rides a bike. He plays second base.

Which sentence does NOT belong in the story?

a. John loves baseball.
b. He has a new baseball glove.
c. He rides a bike.
d. He plays second base.

Grade 8

Directions: Read the paragraph and find which sentence does NOT belong in the story.

14. Jackie began baby-sitting when he was twelve. He began by taking care of his little sister on afternoons when his mother had to work. Next he got a job sitting for his next door neighbors who had two young boys. They also had a big car and sometimes took Jackie for rides. Within the nest two years Jackie got many more jobs as a baby-sitter. Last week he applied for a part-time job at a day care center. He got the job because of all his experience taking care of children.
Which sentence does NOT belong in the story?

a. Within the next two years Jackie got many more jobs as a baby-sitter.
b. They also had a big car and sometimes took Jackie for rides.
c. Jackie began baby-sitting when he was twelve.
d. Next he got a job sitting for his next door neighbors who had two young boys.

Directions: Read the story and answer the question.

13. A study room is a quiet place to read books. Newspapers are also read silently. People walk softly in the room. They make a lot of noise talking there.

Choose the sentence that does not fit the rest of the story.

a. A study room is a quiet place to read books.
b. Newspapers are also read silently.
c. People walk softly in the room.
d. They make a lot of noise talking there.

Directions: Read the story and answer the question.

15. John likes school. Sometimes he goes to the library. After dinner he does his homework.

Which statement cannot be proven by information given in the story?

a. John goes to school.
b. John has homework to do.
c. John is a good student.
d. John goes to the library.

Grade 11

Directions: Read the paragraph and find the sentence that does NOT belong in the story.

16. Bob is a real baseball fan. He enjoys watching and playing baseball. He has season tickets for the Braves games. He also rides his bicycle around town. He plays second base on the high school baseball team.

Which sentence does NOT belong in the story?

a. Bob is a real baseball fan.
b. He has season tickets for the Braves games.
c. He also rides his bicycle around town.
d. He plays second base on the high school baseball team.

Directions: Read the story and answer the question.

17. Maria's science teacher gave a mid-term test. The test was announced two weeks before it was given. The teacher prepared a set of study sheets for the test. Maria used the study sheets when she was getting ready for the test. She made the highest grade in the class on the test.

Which statement CANNOT be proven by information given in the story?

a. Maria had a science test.
b. Maria studied carefully.
c. The test was too easy.
d. The teacher gave out study sheets.

Directions: Read the story and answer the question.

18. John listens to his teachers in class, takes accurate notes, and writes down all of his assignments. His good grades reflect the amount of effort he puts into his studies. John's mother and father are proud of his achievements.

Based on the facts given in the paragraph, which statement may not necessarily be true?

a. John and his family like to read.
b. John is a good student.
c. John studies hard.
d. John listens in class.

Appendix B

Sample Items for Mathematics Standards Mentioned in the Recommendations Section

Standard J

Grade 5

1. Add: $\frac{4}{6} + \frac{1}{6}$

   a. $\frac{4}{36}$

   b. $\frac{3}{6}$

   c. $\frac{5}{6}$

   d. $\frac{5}{12}$

2. Add: $\frac{5}{9} + \frac{2}{9} =$

   a. $\frac{3}{9}$

   b. $\frac{7}{18}$

   c. $\frac{10}{9}$

   d. $\frac{7}{9}$

3. Subtract: $\frac{4}{6} - \frac{3}{6}$

   a. $\frac{2}{6}$

   b. $\frac{7}{6}$

   c. $\frac{1}{6}$

   d. $\frac{1}{12}$

4. Subtract: $\frac{13}{27} + \frac{8}{27} =$

   a. $\frac{5}{27}$

   b. $\frac{15}{27}$

   c. $\frac{5}{54}$

   d. $\frac{6}{27}$

Grade 8

5. Add: $\frac{2}{3} + \frac{1}{5} =$

   a. $\frac{3}{8}$

   b. $\frac{3}{15}$

   c. $\frac{8}{15}$

   d. $\frac{13}{15}$

6. Add: $\frac{3}{10} + \frac{1}{4}$

   a. $\frac{1}{20}$

   b. $\frac{11}{20}$

   c. $\frac{4}{14}$

   d. $\frac{4}{40}$

Grade 8

7. Subtract: $\frac{1}{2}$

$$\underline{-\ \frac{3}{8}}$$

a. $\frac{2}{6}$

b. $\frac{1}{8}$

c. $\frac{2}{8}$

d. $\frac{7}{8}$

8. Subtract: $\frac{7}{8} - \frac{3}{5} =$

a. $\frac{4}{3}$

b. $\frac{4}{40}$

c. $\frac{3}{40}$

d. $\frac{11}{40}$

Grade 11

9. Add: $67\ \frac{1}{5}$

$$\underline{+\ 12\ \frac{3}{5}}$$

a. $\frac{4}{5}$

b. $55\ \frac{2}{5}$

c. $79\ \frac{4}{5}$

d. $79\ \frac{4}{10}$

10. Add and rename in simplest form:

$$78\ \frac{5}{8}$$
$$\underline{+\ 42\ \frac{3}{4}}$$

a. $1\ \frac{7}{12}$

b. $36\ \frac{1}{12}$

c. $120\ \frac{7}{12}$

d. $121\ \frac{7}{12}$

11. Subtract: $94\ \frac{3}{10}$

$$\underline{-\ 28}$$

a. 66

b. $66\ \frac{3}{10}$

c. $74\ \frac{3}{10}$

d. $76\ \frac{3}{10}$

12. Subtract: 7

$$\underline{-\ 6\ \frac{3}{8}}$$

a. $\frac{5}{8}$

b. $1\ \frac{3}{8}$

c. $1\ \frac{5}{8}$

d. $13\ \frac{3}{8}$

13. Subtract and reduce to simplest terms:

$$\begin{array}{r} 78\ \frac{5}{6} \\ -\ 42\ \frac{3}{10} \\ \hline \end{array}$$

a. $\frac{2}{5}$

b. $\frac{8}{15}$

c. $36\ \frac{2}{4}$

d. $36\ \frac{8}{15}$

14. Subtract:

$$\begin{array}{r} 37\ \frac{1}{4} \\ -\ 12\ \frac{5}{6} \\ \hline \end{array}$$

a. $24\ \frac{3}{12}$

b. $24\ \frac{5}{12}$

c. $25\ \frac{5}{12}$

d. $55\ \frac{4}{2}$

Standard U

Grade 5

15. Ann and Betty bought a pizza. Ann ate $\frac{2}{8}$ of the pizza. Betty ate $\frac{5}{8}$ of it. How much more of the pizza did Betty eat than Ann?

a. $\frac{3}{8}$ of the pizza

b. $\frac{3}{8}$ of the pizza

c. $\frac{7}{16}$ of the pizza

d. $\frac{7}{8}$ of the pizza

Grade 8

16. Marcus baked a cake. When it was done, he and his friends ate $\frac{1}{2}$ of it. After dinner his family ate $\frac{3}{4}$ of what was left of the cake. What fraction of the whole cake did his family eat after dinner?

a. $\frac{1}{4}$ of the cake

b. $\frac{3}{8}$ of the cake

c. $\frac{4}{8}$ of the cake

d. $\frac{4}{6}$ of the cake

Grade 11

17. Charlie lives $\frac{2}{5}$ of a mile from school. Dorothy lives $\frac{1}{3}$ of a mile from school. Charlie lives how much farther from school than Dorothy?

a. $\frac{1}{15}$ of a mile

b. $\frac{1}{2}$ of a mile

c. $\frac{3}{8}$ of a mile

d. $\frac{11}{15}$ of a mile

18. Mike spent $\frac{1}{4}$ of his salary on fuel for his car. He also spent $\frac{2}{5}$ of his salary on insurance for his car. What fraction of Mike's salary was spent on insurance and fuel for his car?

a. $\frac{2}{20}$ of his salary

b. $\frac{3}{20}$ of his salary

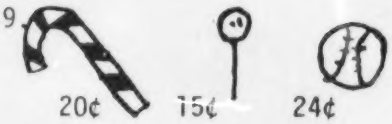
c. $\frac{13}{20}$ of his salary

d. $\frac{3}{9}$ of his salary

Standard V

Grade 3

19.



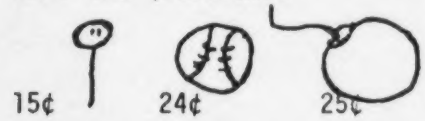
Jane buys the ball and the lollipop. How much does she have to pay?

a. 9¢
b. 35¢
c. 39¢
d. 49¢

21. Joe bought a lollipop and gave the clerk 25¢. How much change did he get?

a. 40¢
b. 25¢
c. 10¢
d. 1¢

Directions: Use this picture to answer the next two questions.



20. How much more does the balloon cost than the lollipop?

a. 9¢
b. 10¢
c. 15¢
d. 40¢

Grade 5

22. Phil bought his lunch at the school lunchroom. Sandwiches cost 25¢ each. Milk was 15¢ a carton. Phil bought two sandwiches and one carton of milk. How much change should he get back from a dollar bill?

a. 35¢
b. 45¢
c. 60¢
d. 65¢

Ice-Cream Soda	$.60
Candy Bar	$.20
Bubble Gum	$.02

23. Casey had $1.00. He bought one ice cream soda, one candy bar, and one piece of bubble gum. How much money did he have left?

a. $.82
b. $.28
c. $.22
d. $.18

Grade 8

24. Gezilda's mother gave her a twenty dollar bill to go shopping. She spent $3.79. How much money did she have left?

a. $16.21
b. $17.31
c. $23.79
d. $27.31

25. A man had $20. First he bought $2.60 worth of groceries. Then he paid $7.12 for a shirt. How much of the $20 did he have left?

a. $ 9.72
b. $10.27
c. $10.28
d. $29.72

26. Sam's Hardware sells two 1-pint cans of paint for $2.98. At Bob's Paint Store three 1-pint cans of the same paint cost $3.87. What is the difference in price for one 1-pint can of paint?

a. $ .20
b. $ .29
c. $ .89
d. $1.29

REFERENCES

Florida Statewide Assessment Program, State and District Report of Results 1977-78, Tallahassee, Fl.: Division of Public Schools - MIS, February, 1978.

Florida Statewide Assessment Program, State and District Report of Results 1978-79, Tallahassee, Fl.: Division of Public Schools - MIS, February, 1979.

Florida Statewide Assessment Program, State and District Report of Results 1979-80, Tallahassee, Fl.: Division of Public Schools - MIS, February, 1980.

Florida Statewide Assessment Program, State and District Report of Results 1980-81, Tallahassee, Fl.: Division of Public Schools - MIS, February, 1981.

Mathematics Item Specifications, Basic Skills 1977 Adoption of the State Student Assessment Test, Tallahassee, Fl.: Dept. of Education, 1980.

Powell, Wm. R. et al. Project to Improve Education in the Basic Skills, Specifying Basic Skills, Technical Report No. 2, Tallahassee, Fl.: Dept. of Education, 1977.

Powell, Wm. R. et al. Teacher Competencies and Indicators for Learning, Technical Report, No. 3, Tallahassee, Fl.: Dept. of Education, Sept. 1977.

Reading Item Specifications, Basic Skills 1977 Adoption of the State Student Assessment Test, Tallahassee, Fl.: Dept. of Education, 1980.